

IN THE DISTRICT COURT OF OKLAHOMA COUNTY
STATE OF OKLAHOMA

Jean Bookout; Charles Schwarz,)
individually and as Personal)
Representative of the Estate of)
Barbara Schwarz, deceased;)
Richard Forrester Brandt, as)
Personal Representative of the)
Estate of Barbara Schwarz,)
deceased,)

Plaintiffs,)

vs.)

Case No. CJ-2008-7969

Toyota Motor Corporation; Toyota)
Motor Sales, U.S.A., Inc.;)
Toyota Motor Engineering and)
Manufacturing North America,)
Inc.; Aisan Industry Co., Ltd.,)

Defendants.)

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TRANSCRIPT OF AFTERNOON TRIAL PROCEEDINGS
HAD ON THE 21ST DAY OF OCTOBER, 2013
BEFORE THE HONORABLE PATRICIA G. PARRISH,
DISTRICT JUDGE

Reported by: Karen Twyford, RPR

***** THIS TRANSCRIPT HAS NOT BEEN PROOFREAD *****

APPEARANCES

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For the Defendants:

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1 (Whereupon, the following afternoon trial proceedings
2 were had on the 21st day of October, 2013, to wit:)

3 THE COURT: We're back on the record, and we're
4 outside the presence of the jury. It is my understanding
5 the defendants wanted to demur to the evidence.

6 MR. TEAGUE: That's correct, your Honor. Comes now
7 the defendants Toyota Motor Company and Toyota Motor Sales,
8 USA, Inc., and demurs to the evidence on all the claims
9 against them by the plaintiffs. The question on demur is
10 whether there is competent evidence to support the elements
11 of plaintiffs' claim. Gillam v. Lake County Raceway, 201 OK
12 41, the answer to that question is no.

13 As to the manufacturer's products liability and
14 negligence claims, plaintiffs have asserted a manufacturer's
15 products liability claim and a negligence claim against
16 Toyota defendants based on an alleged design defect in the
17 electronic throttle control system of Ms. Bookout's 2005
18 Toyota Camry, and based on Toyota's failure to install a
19 brake override system in the '05 Camry.

20 To prove their products liability claim, plaintiffs
21 must prove the 2005 Toyota Camry was defectively designed
22 and unreasonably dangerous, and the design defects they
23 allege caused the Bookout crash, citing Kirkland v. General
24 Motors, 521 P.2d 1353. As Kirkland expressly cautions, the
25 mere possibility that the defect might have caused the crash

1 is not enough.

2 The same is true with regard to plaintiffs'
3 negligence claims. Plaintiffs must prove Toyota breached a
4 duty to plaintiffs with regard to the design of the
5 electronic throttle control system and the brake system in
6 the '05 Camry, that such a breach was the proximate cause of
7 the injury; Eicklehard v. Board of County Commissioners of
8 Roger County, 60 P.3d 497.

9 As the Oklahoma Supreme Court cautioned in Gillam,
10 201 OK 41, where one conclusion from the evidence would be
11 as sound as another, the evidence maybe said to leave the
12 matter wholly within the realm of mere conjecture, and any
13 conclusion would be the result of a common speculation, a
14 prima facia case is not established in such circumstances,
15 and a demurrer to the evidence would be in order.

16 On the electronic throttle control software design
17 defect claim, plaintiffs' human factors expert Richard Gill
18 testified that the most common cause of UA is driver error,
19 and that is a possible explanation for the Bookout crash was
20 the result of driver error. Gill agreed that pedal
21 misapplication would constitute driver error. And if you
22 had a pedal misapplication, the driver would report the
23 harder she pressed the accelerator pedal the faster the
24 vehicle went; that is the testimony from Mrs. Bookout.

25 Gill also testified that the driver's age of Ms.

1 Bookout -- drivers of the age of Ms. Bookout are at an
2 increased risk for making pedal errors and being in
3 accidents. Additionally, the Cooper study put forth by the
4 plaintiffs proves that the pedal misapplication is a cause
5 of UA. The testimony of Michael Barr and Philip Koopman is
6 also insufficient to support plaintiffs' claims that there
7 was a defect in the Camry software design.

8 Koopman hasn't seen Toyota software source code,
9 but says that it was of poor quality. But he also says that
10 you cannot always design out software bugs, nor can you
11 always find them. He also testified that the software
12 mitigation factors that Toyota had built into the system
13 were good, he just didn't think that they were good enough.
14 Koopman admitted he is not offering the opinion that a
15 software defect lead to a UA event that caused the Bookout
16 crash, it was just a mere possibility.

17 With respect to Barr, he is the only expert
18 presented by the plaintiff who attempts to connect causation
19 with the alleged defect. Barr admitted in his deposition
20 that he could not rule out pedal error as a cause of this
21 accident. When he appeared at trial, he said he can do that
22 now, but he presented no testimony or evidence on what he
23 had done to rule out pedal error. And there was a motion in
24 limine that was filed at the beginning of the case that was
25 agreed to or granted by the court that the expert testimony

1 would be those opinions that they arrived at in their
2 deposition. So Mr. Barr himself has not, in fact, ruled out
3 pedal error as the cause of the accident.

4 Expert testimony offered to support a design defect
5 claim must be reliable under Daubert. Expert evidence that
6 is speculative and not scientifically reliable is
7 insufficient to support a jury's verdict. That accurately
8 describes Barr's testimony for the reasons defendants have
9 previously urged. Barr's testimony is inadmissible under
10 Daubert and should be stricken from the record. Even if
11 Barr's testimony is considered, it is insufficient to
12 support a jury verdict.

13 Barr admits that there is no software that does not
14 have bugs and that you will never get zero bugs in software.
15 Barr has never been able to reproduce in any testing his
16 theories of software bugs or memory corruption; in fact, he
17 admitted that he had never tested it. If Ms. Bookout
18 pressed the brakes, the failsafes kicked in and all the
19 testing that has been done by anyone in the case, and Barr
20 testified that he's never seen a failsafe not activate in a
21 test -- his comment was, though, essentially you can't prove
22 a negative.

23 Barr admitted that no one has ever had memory
24 corruption caused throttle to open greater that has not been
25 duplicated or documented in any testing. His comment was

1 that unfortunately for Toyota you can't disprove it, it is
2 trying to prove a negative. Unfortunately, that doesn't
3 meet the standard for the burden of proof. He can't come
4 into this court and say just because I say it and you can't
5 disprove it that is not sufficient evidence to advance his
6 theory. In other words, he said he hadn't tested it, he
7 can't prove it, but because you can't disprove it then I'm
8 going to advance my theory.

9 Barr said it was not possible to reproduce Ms.
10 Bookout's crash, but plaintiffs' brake expert Mr. Hannemann
11 said that it was possible, and it was possible by
12 inadvertently pressing the accelerator pedal and later
13 finding the brake pedal in the course of the events. The
14 evidence presented on this claim is wholly insufficient to
15 allow a jury to make a rational, nonspeculative finding that
16 the Bookout crash was caused by a UA event triggered by a
17 design defect in the throttle of the Toyota Camry.
18 Plaintiffs' evidence, at best, requires speculation.

19 As to the brake system design defect claim, Mr.
20 Hannemann testified that he thought that there could be a
21 better brake override system that would account for any
22 electrical failures, but he hadn't tested it and he doesn't
23 have an alternative design. Hannemann also testified that
24 any mechanical problems, he didn't find any mechanical cause
25 in the Bookout vehicle that would be accountable for the

1 crash and that the vehicle complied with FMVSS 135.

2 In that same vein, Mr. Hannemann testified that the
3 most common form of UA is pedal misapplication, which brake
4 override system would not prevail. I will move now to the
5 plaintiffs' deceit claim.

6 THE COURT: Before we do that, it would be easier
7 for me if I just let respond to those first two.

8 MR. BAKER: In response, your Honor, looking at
9 Jackson v. Jones, 1995 OK 131, when the court considers a
10 demur to evidence, it must take all -- take as true all
11 evidence together with all reasonable inferences favorable
12 to the party against whom relief is sought and disregard any
13 conflicting evidence that may favor the demur.

14 A demur should be overruled unless there is an
15 entire absence of proof tending to show a right to recover.
16 In short, the demur must be denied if the opponent has made
17 out a prima facie case. With respect to negligence and
18 strict reliability related to the defect in claims,
19 plaintiff has presented evidence through numerous experts,
20 including Mr. McCort, Mr. Barr and Mr. Koopman.

21 Mr. McCort testified as to causation in this case.
22 He testified that based on the distances traveled and the
23 brake application that the only way this wreck could occur
24 was in the event there was an open throttle; that absent an
25 open throttle the vehicle should have stopped before it left

1 the pavement. Mr. Barr also testified regarding causation
2 establishing that the design and software of the electronic
3 throttle control system has numerous defects and
4 deficiencies which can allow the throttle to open up to any
5 value due to either a hardware or memory, software, excuse
6 me, memory corruption particularly related to the throttle
7 angle variable.

8 Mr. Barr and Mr. Koopman both testified regarding
9 the standard a software developer should use when making
10 software that will be used by this consumers. Each
11 testified to numerous industry coding standards that were
12 violated that resulted in defects in the software. Mr. Barr
13 also testified to the various Toyota coding rules that were
14 also violated. I believe the number Mr. Barr was able to
15 show was approximately 80,000 violations of industry coding
16 standards.

17 Dr. Koopman also testified that when developing a
18 system you have to follow the proper process for developing
19 software, and that one of the absolute no-nos which creates
20 a defective software system is when you have a single point
21 of failure. His testimony was in evaluating a system once
22 you get to the point where you see a single point of failure
23 the system is deemed defective under industry standards; he
24 found that in the electronic throttle control system.

25 In terms of alternative design, Mr. Hannemann

1 discussed that there was a developmental system that Toyota
2 had available that would have detected or should have worked
3 on a software failure. Also, Mr. Barr, in discussing the
4 brake override system, specifically described how you would
5 design a system that would read or detect a software
6 failure. And I think in describing that he mentioned that
7 all Toyota had to do was use a unit of two CPU system which
8 Toyota had previously used but went to one in this vehicle.

9 So to that extent and that evidence, we have
10 established a prima facie case as to the negligence and
11 strict liability.

12 THE COURT: Okay. Let's move on. You said
13 misrepresentation, fraud.

14 MR. TEAGUE: I need to take one step back, your
15 Honor, and to the extent, if plaintiffs are asserting a
16 breach of warranty claim, then there has been absolutely
17 zero evidence presented on a breach of warranty claim.

18 THE COURT: I'm glad you brought that up; that was
19 my next claim. Are you still pursuing your breach of
20 warrant of fitness for a particular purpose and
21 merchantability?

22 MR. TAWWATER: Breach of implied warranty, yes,
23 ma'am, not expressed warranty. I think counsel is correct
24 we did not present any evidence with regard to expressed
25 warranty.

1 THE COURT: Are you just talking about expressed
2 warranties?

3 MR. TEAGUE: We should include both of those. My
4 demurrer would be to both of them.

5 THE COURT: All right. And your issue with regard
6 to the fraud claim.

7 MR. TEAGUE: The deceit claim. Yes, your Honor.
8 Plaintiffs have asserted a deceit claim against the
9 defendants. Under Oklahoma law, deceit is an intentional
10 tort that must be proved by clear and convincing evidence.
11 Plaintiffs must submit evidence of an element of deceit
12 claim before it may be submitted to the trier of fact.
13 Derakhshan v. Tizzio, D-E-R-A-K-H-S-H-A-N v. T-I-Z-Z-I-O
14 2012 OK Civ App 8.

15 And in order for the plaintiffs' deceit claim to go
16 forward, plaintiffs must present evidence that Toyota
17 willfully failed to disclose a fact that it was bound to
18 disclose with intent to induce them to act to their
19 detriment. The tort of deceit provides a remedy only to a
20 person who suffers damages due to reliance upon the deceit.
21 Reliance is an indispensable element of deceit, Everest v.
22 FSF Overlake Associates, 203, OK 53.

23 Plaintiffs have offered no evidence, much less
24 clear and convincing evidence, that Toyota willfully and
25 intentionally failed to disclose any fact it had a duty to

1 disclose to the plaintiff in 2005 regarding the 2005 Toyota
2 Camry, or any evidence that Ms. Bookout relied on and was
3 deceived by any such nondisclosure when she purchased her
4 Camry in 2005.

5 Plaintiffs offered no evidence at all regarding
6 what Ms. Bookout knew or didn't know when she bought the
7 vehicle in 2005 or why she bought the vehicle at that time.
8 There has been zero evidence about anything that was said to
9 her that she relied upon. The only testimony that was
10 offered was that she said if she claims to know now what she
11 knew then, that's completely irrelevant to proving the
12 reliance as it relates to the deceit claim in 2005 when she
13 purchased the vehicle.

14 THE COURT: And I will tell you: On the
15 misrepresentation claim, what I want you really to focus on,
16 Mr. Baker, is this whole reliance and what have you done.
17 Because I heard very little about reliance on anything.

18 MR. BAKER: Sure. Under 76 Oklahoma statute
19 annotated Section 4, it reads:

20 "One who practices a deceit with intent to defraud the
21 public or a particular class of persons is deemed to
22 have intended to defraud every individual in that class
23 who is actually misled by the deceit."

24 The deceit in this case would relate to concealment
25 of facts. And looking at the jury instruction, patterned

1 jury instruction -- I don't have the number -- the duty is
2 to disclose facts that are particularly within a company or
3 a person's knowledge, and that the other person is not in a
4 position to discover them. And I have to say this, your
5 Honor, in order to answer your question. And that's pattern
6 charge 18.5.

7 In this case, we have shown you evidence that
8 Toyota was aware that they had an UA or unintended
9 acceleration issue with their Camrys in 2004, that they were
10 aware there was a 400 percent increase in the claims. We
11 have evidence of that they intentionally withheld from NHTSA
12 long-duration events when asked by NHTSA, so they would have
13 looked, they were aware they had long-duration events but
14 only provided them with short-duration events.

15 THE COURT: Even assuming all of that is true, what
16 do you have to show that either Ms. Bookout -- is the fraud
17 claim for both, or the deceit claim, is it both for Ms.
18 Bookout and Ms. Schwarz?

19 MR. BAKER: It would only apply I believe to Ms.
20 Bookout.

21 THE COURT: Let me ask on that same line, the
22 applied warranty, is that for both of them?

23 MR. BAKER: Yes.

24 THE COURT: Okay. So what you just read for me
25 from the statute, 76 O.S. 4, the language in there, the

1 public to the extent they're actually misled. what do I
2 have to show that Ms. Bookout -- based on her testimony.

3 MR. BAKER: There was also testimony that Toyota
4 was advertising their vehicles as safe, they were arguing to
5 NHTSA at that time that their vehicles were safe. And Ms.
6 Bookout clearly testified that had she been made aware that
7 there was an unintended acceleration problem with the
8 vehicle she would not have purchased it. For the purposes
9 of a demurrer, we have established a prima facie case of
10 reliance under section on deceit.

11 THE COURT: So what she said -- you said she said
12 if she knew now what she knew then, she wouldn't purchase
13 it?

14 MR. TEAGUE: If she knew then what she knows now
15 she wouldn't have purchased it.

16 MR. TAWWATER: Again, the test is all our evidence
17 and reasonable inferences. So when she testified had I
18 known all of these things that I have now seen about Toyota
19 that they have concealed, had I known all of that at the
20 time, I certainly wouldn't have purchased the vehicle. It
21 is safe to infer that she purchased the vehicle in reliance
22 on the fact that none of this detrimental evidence was in
23 her knowledge.

24 THE COURT: But when she says that, is she making
25 the distinction about what Toyota may or may not have done

1 as of the day she purchased the vehicle or is she talking
2 about -- because wouldn't the standard for deceit be what,
3 perhaps, did they -- everything that you talked about, the
4 2004 and what they knew or didn't know, wouldn't that all --
5 are you saying it is a continuing deceit, then, even after
6 she purchased it?

7 MR. BAKER: Yes, ma'am. Continues to this day.

8 MR. TAWWATER: It began before she purchased the
9 vehicle and continued for long after she purchased it.

10 THE COURT: And the thing that she said was if she
11 knew then what she knew now she wouldn't have purchased the
12 vehicle, correct?

13 MR. BAKER: Yes.

14 THE COURT: Okay. Go ahead.

15 MR. TEAGUE: Quickly, your Honor, I need to go
16 back. Summary judgment was granted as to Mrs. Schwarz on
17 the implied warranty claim. So to the extent that that --

18 THE COURT: Was that an agreed journal entry?

19 MR. BAKER: It was.

20 THE COURT: So Bookout is the only one on the
21 implied warranty. And let me ask: Is that both fitness and
22 merchantability under both statutes, fitness for a
23 particular purpose and merchantability?

24 MR. TAWWATER: That is the claim that we made is
25 for both. Yes, your Honor.

1 THE COURT: Do you have anything else on the deceit
2 claim?

3 MR. TEAGUE: With respect to the 400 percent
4 increase, your Honor, that is not related to the 2005
5 vehicles. As I understand, that is related to 2002 and 2003
6 model year vehicles over the time period of 2000 and 2001.
7 Moreover, there is no evidence that Toyota had any knowledge
8 about a UA related to the specific claims that are being
9 asserted here with respect to the electronic throttle
10 control.

11 You can't lump in all these other events under the
12 umbrella of UA. It would have to be to the specific defect
13 claim they're making here. As I pointed out a while ago,
14 there is absolutely zero evidence of any reliance by the
15 plaintiffs with respect to a deceit and fraud claim.

16 THE COURT: Okay. And then next thing I have is
17 the -- just go ahead.

18 MR. TEAGUE: Yes the next item that I have, your
19 Honor, is the punitive damage claim. In order to recover
20 punitive damages, plaintiffs must first present at a minimum
21 clear and convincing evidence of conduct by the defendants
22 in such reckless disregard for the rights that malice and
23 evil intent maybe inferred therefrom, Oklahoma statute Title
24 23, Section 9.1. And Badillo, B-A-D-I-L-L-O, v. Midcentury
25 Insurance, 121 P.3d 1080, reckless disregard means the

1 defendant was either aware or did not care that there was a
2 substantial and unnecessary risk that it's conduct would
3 cause serious injuries to others, uniform jury instruction
4 5.6.

5 The evidence, or lack thereof in this case, compels
6 the withholding of plaintiffs' punitive damage claim.
7 Plaintiffs have offered no evidence, much less clear and
8 convincing evidence of any conduct by defendants in the
9 design of the 2005 Toyota Camry that would warrant the
10 imposition of punitive damages. The evidence is directly to
11 the contrary.

12 The 2005 Toyota Camry complied with all federal
13 motor vehicle safety standards. The National Highway
14 Traffic and Safety Administration found no electronic cause
15 of UA events in the Toyota vehicle at issue. Plaintiff's
16 expert, Mr. Koopman, admitted that Toyota exercised care in
17 designing its software. It had designed in failsafes and
18 had designed in mitigation strategies into its software.

19 There was testimony that Toyota did extensive
20 testing. And plaintiffs' expert Mr. Barr admitted that you
21 cannot safety test enough to catch all bugs related to the
22 software. Mr. Koopman admits that no one has ever
23 duplicated or reproduced the UA event as alleged by the
24 plaintiffs. And an inspection of the vehicle by all the
25 experts, both plaintiffs and defendants in this case have

1 found no engine problems, no diagnostic problems, and no
2 problems with the brakes.

3 The evidence has been that safety was not an
4 afterthought of Toyota. And in every instance, all testing
5 -- in all testing the failsafes that are designed into the
6 electronic throttle control have always closed the throttle
7 and put the vehicle in a safe position. The evidence
8 demonstrates Toyota used reasonable care in making its
9 design choices and negates any finding that it engaged in
10 conduct that would be characterized as such reckless
11 disregard to its consumers' rights that malice and evil
12 intent could be inferred therefrom.

13 The Guyer case v. America Honda, 529 U.S. 861,
14 notes that compliance with government standards, while not a
15 complete defense on the merits, would presumably weigh
16 against an award of punitive damages because it would
17 evidence conduct consistent with required mental state. I
18 think that's all I have at this point, your Honor.

19 THE COURT: Mr. Baker.

20 MR. BAKER: Your Honor, we have put on evidence,
21 particularly through Mr. Lentz and Mr. Santucci, as well as
22 Mr. Ishii and Mr. Osawa. And I will discuss each one
23 separately, that there was a been a continuing coverup and
24 effort to deny software problems with the Camry since 2004
25 when they were informed, Toyota that is, that there was a

1 400 percent increase in UA events, which includes this model
2 vehicle. The 2005 is within the range of vehicles of 2002
3 to 2006. It is the same vehicle.

4 We put on evidence showing that there was a knowing
5 violation of industry coding rules which related in
6 defective software. We have shown, I believe it was the
7 testimony of Mr. Ishii, a PowerPoint done by another Toyota
8 employee, Mr. Kawana, who in 2002 wrote a paper saying that
9 you would have so many minor bugs and major bugs if you
10 didn't follow coding rules. And we brought out the bug
11 chart. And he used the first number starting with 30 rule
12 violations.

13 The evidence has been there are at least 80,000
14 coding rule violations in this software that would lead to
15 the defects. There was also testimony from Mr. Ishii that
16 -- with regard to the monitor software, the monitor CPU.
17 The last line of defense for a UA, Toyota never got the
18 source code, never attempted to get the source code. So
19 they had no idea how it would actually perform. They did do
20 some spot testing.

21 Mr. Ishii also testified that Toyota had never
22 tested the software in an instance where they tried to
23 determine whether the throttle would be stuck open in the
24 event of task death. Mr. Osawa, who is a Denso employee,
25 who provides the monitor CPU to Toyota, testified that the

1 source code within that component did not comply with MISRA.

2 Going back to Mr. Kawana's work, within his
3 presentation, it was his position that Toyota actually
4 followed MISRA-C rules. But then after the review, it
5 became clear from the evidence that we presented that they
6 did not follow them. At best, 10 or 11 percent of the rules
7 were followed.

8 Regarding the NASA investigation into this, we
9 presented evidence that Toyota withheld information,
10 specifically the source code for the monitoring CPU, and
11 actually misrepresented the content of the software to NASA
12 telling them that in terms of hardware defects there was
13 EDAC that was available for the 2005 Camry when, in fact,
14 there was none.

15 They also misrepresented the amount of storage
16 capacity in the stack, said it was only about 40 percent,
17 maybe 44 percent used when, in fact, our analysis showed it
18 was 94 percent. The reason that is significant is that
19 creates or allows memory corruption. Once you fill it up.
20 It moves over and starts using up your memory and starts
21 corrupting it. So Toyota misrepresented that to NASA.

22 Toyota -- Mr. Lentz confessed to congress that even
23 with the remedial measures that Toyota has taken, they still
24 haven't addressed 70 percent of the UA claims that are out
25 there. Toyota, prior to the manufacture of this vehicle, or

1 around the time of the manufacture of this vehicle, was
2 within itself discussing the fact that it had spaghetti
3 code, that its code was so confusing that it couldn't figure
4 out how it worked.

5 We also showed that a motive for doing all of this
6 came through some of the testimony of Mr. Takimoto, who was
7 an advisor to TMC. He testified that now that all this has
8 come up that there was a great economic impact to Toyota
9 that, in fact, that their sales dropped once all of this
10 started becoming public. So it is our position that we put
11 on evidence that shows that a motive for keeping the
12 software under wraps was to prevent them from losing money
13 and losing sales.

14 So to that extent that I have gone over some of the
15 evidence briefly, we believe we have met the standard for a
16 demurrer as to the punitive damages claim.

17 THE COURT: Counsel, what are Mr. Schwarz's
18 individual claims versus his claims as personal
19 representative? I don't know what his individual claims
20 are.

21 MR. TAWWATER: He has his individual claim for the
22 loss of his wife. Then there is a claim of the estate
23 which, since there is an estate, we can do it either as a
24 surviving spouse or through the estate. There is a claim
25 for the pain and suffering of Barbara Schwarz before her

1 death and a claim for funeral expenses.

2 THE COURT: Aren't those all included in a wrongful
3 death claim anymore?

4 MR. TAWWATER: Yes.

5 THE COURT: I'm just wondering, because -- and I
6 will tell you in another case I recently ruled that all the
7 damages that one can recover under the survival statute are
8 also recoverable under the wrongful death statute. And the
9 issue there is whether the physical pain and suffering of
10 the deceased can be recovered. Because he gets his loss of
11 consortium claims through the wrongful death claim.

12 MR. TAWWATER: That's correct.

13 THE COURT: So I don't know why he is named
14 individually if there is a claim or something that I'm not
15 picking up.

16 MR. TEAGUE: And as I recall the state of the law,
17 once a personal representative has been appointed, it is the
18 only one that has an authority to bring a claim. As
19 husband, he takes under the wrongful death statute anything
20 under that wrongful death claim. He doesn't have an
21 individual claim that he can bring separately on his own.

22 MR. TAWWATER: I think that is correct. Once the
23 probate was established, all the claims had to be brought
24 through that.

25 THE COURT: Because whatever his recoveries, he can

1 make individually he gets through the wrongful death
2 statutes now.

3 MR. TAWWATER: I believe that's correct.

4 THE COURT: All right.

5 MR. TEAGUE: Your Honor, if I might, one thing:
6 There is no evidence of any deliberate misrepresentations.
7 It was pointed out to me about NASA, Barr wasn't privy to
8 those discussions. And on this punitive damage claim, Mr.
9 Koopman testified that there were failsafes designed into
10 the Toyota software and there were mitigation strategies
11 designed into it. He just said it wasn't good enough; that
12 hardly rises to the level of evidence to warrant a punitive
13 damage claim.

14 And if you take Mr. Barr at his word, I don't think
15 you can be punished for not being able to disprove what he
16 has not been able to prove ever existed as far as this
17 memory corruption.

18 MR. BAKER: We also put on as evidence that in
19 terms of the upper management of this company, in terms of
20 actually trying to do something about UA, Mr. Lentz
21 testified that until the Saylor accident happened in August
22 of 2009 it was not on his radar.

23 Prior to that, we put on evidence through Mr.
24 Santucci that when NHTSA was asking about UA issues that
25 within Toyota, when they ran searches for these claims and

1 included surge, which many of the OSI claimants described it
2 as, they came up with 60,000 claims. In turn, they gave
3 NHTSA 124 because they specifically instructed the people
4 running it only put in floor mat. Only put in floor mat, it
5 will restrict it. Again, that is part of what we describe
6 as conspiracy to hide the software issue.

7 The court has also -- will remember a number of
8 e-mails where essentially the Toyota staff was giving each
9 other high-fives because they had saved a hundred million
10 dollars restricting it to floor mats instead of having it
11 expanded. There was also testimony that Toyota was fined by
12 NHTSA for failure to report European UA events.

13 So putting all this evidence together, we think we
14 certainly met the standard required for punitive damages.

15 MR. TAWWATER: I was just going to speak to the
16 punitive damage, but I --

17 THE COURT: The court is going to deny the request
18 for a demurrer on all the claims, with the understanding
19 that Charles Schwarz's individual claims are all included as
20 his claims as personal representative. So the case will
21 just be him as personal representative. The deceit claim
22 and implied warranty claims are just claims that Ms. Bookout
23 have to assert.

24 (Whereupon, the jury returns to the courtroom.)

25 THE COURT: Mr. Stopschinski you can come back to

1 the stand. Sir, you're still under oath? Mr. Jennings, you
2 can continue your direct exam.

3 KARL STOPSCHINSKI,
4 recalled as a witness, after having been first duly sworn,
5 testified as follows:

6 DIRECT EXAMINATION cont.

7 BY MR. JENNINGS:

8 Q Mr. Stopschinski, when we took our break for lunch,
9 we were about to wrap up our discussion of test number 11,
10 the driving and performance test that was done at the crash
11 site. This is the one where you had the throttle open and
12 you had 30 pounds of braking. Are we back together on the
13 subject we were discussing?

14 A Yes. I think the peak force was 30 pounds, and the
15 average force was less than that.

16 Q Exactly right. So the point of the test was that you
17 had both the accelerator applied and the brake applied; is
18 that right?

19 A That's correct.

20 Q And did you create a graphic to depict the result of
21 this test and something that was overlaid on the scene model
22 that you created?

23 A Yes.

24 Q Let's take look at that, please. Using your point,
25 if you have it handy?

1 A I do.

2 Q Show us where we are when the braking applied and
3 then -- when the braking was applied and then what the
4 result of that was, please.

5 A Okay. I've created these graphics to go with a few
6 of these test runs. What they're intended to show is
7 representation of the three panels, a large panel on top, a
8 large scale, and a slightly zoomed-in panel in the center.
9 At the bottom, we have the actual test data itself. Now, it
10 is represented by the speed of the vehicle and whether the
11 vehicle is constant speed, acceleration or braking.

12 In this run, we have a constant speed, which is the
13 light-blue box for a period of time, then we have the brake
14 applied and you see the speed decreasing as we continue to
15 to travel a distance. The length of this graphic
16 corresponds to the stopping distance or the travel distance
17 of the vehicle.

18 So what this is intended to show is that with
19 throttle held in the 70 mile per hour position, the brakes
20 are applied at this point here where it says begin braking.
21 And the brakes are applied with no more than 30 pounds of
22 force on the pedal. With the throttle open, the vehicle
23 travels down the ramp and comes to a stop in this position
24 here where it says stop. That is just in front of this
25 traffic sign that I mentioned earlier. It is about halfway

1 down the ramp.

2 Q So if Mrs. Bookout, when she came down the ramp, had
3 for whatever reason the throttle of the vehicle open and the
4 vehicle is proceeding on in that fashion and the brake is
5 also applied at the level that you described in your test
6 what happens to the car?

7 A The vehicle slows and stops.

8 Q Okay. All right. Do we have anything else on test
9 number 11? I think we're there. Let's move on.

10 A Okay.

11 Q I think we wanted to take a look at test number 12.
12 Are you with me on that?

13 A Yes.

14 Q Let's put a graphic up that will allow us to
15 introduce that. Tell us how you designed this test, if you
16 would, please, and why.

17 A This is test number 12. It is just like test 11 in
18 that I'm coming in at a near 70 mile per hour, in this case
19 67 mile per hour, and I'm holding the throttle open with my
20 right foot simulating a struck throttle, simulating an open
21 throttle.

22 At this point what I want to see from this test is
23 if I apply a low brake pedal force, so I'm trying to put in
24 a very minimal force on the brake pedal, what the response
25 of the vehicle would be with the throttle open.

1 Q Is that the difference between this test and the test
2 we just looked at, the difference in the brake force?

3 A It is. Yes.

4 Q Okay. Go ahead. Next.

5 A So, again, Highway 69 taking the exit to the right.
6 You can see my right foot on the accelerator pedal, and that
7 will remain in that position holding the throttle open. I
8 will begin braking right as I turn into the ramp. Now with
9 my left foot I am applying a low brake force pressure on the
10 area of about five pounds or so.

11 And you can see the vehicle is slowing down, and it
12 now continues to travel. What has happened is I have
13 reached kind of an equilibrium point where the throttle is
14 causing the vehicle to go but there is enough braking to
15 hold the vehicle from accelerating, but it is traveling at
16 about a constant speed, right around ten miles per hour.

17 Now, the first part of the braking input, the
18 vehicle decelerated rapidly, meaning the speed dropped down
19 quite a bit, but at this level of braking, the speed remains
20 at about 10 miles per hour. At the very end, I increase the
21 brake force just a little bit, and it went ahead and
22 stopped.

23 Here is a view coming down the ramp. The brake is
24 on, the throttle is open, and you can see how the speed has
25 diminished from 68 miles per hour very quickly on the ramp.

1 Now it is at an equilibrium position traveling down the ramp
2 at about 10 miles per hour.

3 Q Once again, in this test we have the throttle open
4 and the brake being applied?

5 A That's right.

6 Q And you said not very much braking or something like
7 that. How much are we talking about?

8 A Well, I was intentionally putting in a very low
9 force. I think the data shows it ranging from about two
10 pounds of force up to about six pounds of force.

11 Q How much is two to six pounds of force?

12 A That is about the weight of putting your foot on the
13 brake pedal and just resting it there.

14 Q When you did this in test in this fashion, little bit
15 of braking, throttle open to the degree you described, the
16 car did what?

17 A Well, it slowed down significantly at first, and then
18 it reached a speed of about ten miles per hour that we saw
19 there at the end of the video, really just creeping down the
20 ramp at ten miles per hour.

21 Q Did you record data from this test as you did on the
22 others?

23 A I did.

24 Q Is that what we're looking at here?

25 A That's what we're looking at here. That was -- the

1 first part of the chart was the entirety of the data, and
2 now we are going to look at the channels broken out one by
3 one. What this shows, similar to what we saw before, you
4 see coming down on the ramp. I'm modulating the accelerator
5 pedal somewhat to maintain the speed, and then I'm holding
6 the accelerator pedal position; that's right at about 16
7 percent, 15 to 16 percent.

8 Now we will show the speed trace. And I want you
9 to see when the brakes come in right away this light blue
10 line is dropping down steeply. You see the initial drop in
11 speed from 68 miles per hour down to -- at this point, I'm
12 showing we're down to 30 miles per hour, then down to 20
13 miles per hour. Now you see that it starts to level out,
14 and that's what we saw with the response of the vehicle with
15 this amount of braking we're leveling out at about ten miles
16 per hour.

17 Now we added the brake force so you can see what
18 the level of braking is to cause that speed change. Again,
19 we are at 68 miles per hour. The brake force is put in.
20 This first little rise of the brake force is about ten
21 pounds, right there, and the speed is dropping off
22 significantly. And then you see the brake force stay in
23 here right at about five pounds on average.

24 Q Is there another chart?

25 A We have a diagram that I created that shows the data

1 from the same run plotted onto the scene. what you see in
2 this diagram is -- you saw in the video that I began braking
3 right at the entrance to the ramp. Where we are picking up
4 the action at this point, the vehicle is decelerating which
5 is this brake applied is the red, and you see the speed
6 dropping off, dropping off.

7 Right about at this point, the speed is maintained
8 at about ten miles per hour, so the vehicle right where I'm
9 showing the laser pointer now down to point where it stops
10 is traveling at about ten miles per hour. At the very end,
11 still with the throttle open, applied just a little more
12 brake force, and the vehicle came to a stop.

13 Q So if out there on the day of the accident, Mrs.
14 Bookout had the throttle open as depicted in this test and
15 had been braking at the same time with a mere five pounds of
16 force, the car would have done what?

17 A Well, it would have slowed significantly. we had ten
18 pounds for just a small amount of time, and then dropped
19 off. But you saw even when the force dropped back to five
20 pounds, the speed was continuing to drop and continuing to
21 drop. So even with the small brake force input and the
22 throttle open, the brakes are powerful enough to bring the
23 speed of the vehicle down significantly.

24 Q Does that conclude test number 12?

25 A Yes.

1 Q There has been talk in this case, Mr. Stopschinski,
2 about pumping the brake. Did you do any tests that involved
3 pumping the brake?

4 A I did.

5 Q Test 14, would that be one of them?

6 A Yes. I believe that's right.

7 Q Let's pull that up.

8 A So stop that for a second. Test 14 and 15 are two
9 runs that I did where I'm pumping the brake pedal. The
10 situation is the same in that I'm holding the throttle open.
11 But what I wanted to do is see the response of the vehicle
12 if the throttle is held open and the brakes are applied and
13 released, applied and released, applied and released which,
14 of course, is what pumping the brake means.

15 We have testimony from Ms. Bookout that she pumped
16 the brakes while the vehicle was on the exit ramp. So I
17 wanted to see the response of the vehicle to that pumping of
18 the brakes.

19 Q Pumping the brakes at the same time the throttle is
20 open?

21 A That's correct.

22 Q Okay. Go ahead. What is next?

23 A So you see the speed of about 70 miles per hour
24 coming into the exit ramp. Again, I will hold the
25 accelerator pedal position with my right foot and begin to

1 apply the brake with my left foot in a pumping fashion,
2 apply release, apply release, apply. And the vehicle stops.
3 So even with the pumping of the brakes, every time I pumped
4 the brakes, the speed decreased the speed decreased, the
5 speed decreased every time the brakes were applied. And,
6 again, vehicle stops in the middle of the ramp.

7 Q So let me get this straight. If Mrs. Bookout had
8 been going down that ramp with the throttle open in the way
9 you depicted in your test and had been pumping the brake as
10 you pumped in your test then ultimately what happens to the
11 car?

12 A Well, it stops. It continues to decrease in speed
13 every time the brake is applied. If you apply the brake and
14 hold it, it decreases more rapidly. If you apply and
15 release and apply and release, every time you apply the
16 brake the speed is dropping and dropping and dropping.

17 Q And ultimately it stops?

18 A And ultimately it stops.

19 Q Do you have other test data on that run?

20 A I do. We can go to the breakout chart that will show
21 the throttle channel first again, the accelerator pedal.
22 Again you see the same kind of thing, we are coming into the
23 course. We're about 10 to 20 percent then I'm holding the
24 throttle about 15 percent, maybe a little bit more at the
25 end. Now you see the speed trace come in.

1 And I want you to take a look at this. This is
2 interesting. If you look at the speed trace, you see it is
3 stair stepping down. Before we saw the speed trace change
4 direction and go down in a steady fashion. The stairstep is
5 a result of the pumping of the brakes. So when the brakes
6 are applied, the speed decreases; that's when it heads down,
7 which is like right in here. When the brakes are released,
8 the speed levels off for that moment in time. When the
9 brakes are applied, the speed drops, released, levels off;
10 applied, speed drops.

11 So what I saw as a result of these tests is that
12 the brakes on this vehicle, even when applied in a pumping
13 fashion, decelerate the vehicle when they're applied.

14 Q You're a pretty big guy, Mr. Stopschinski. How much
15 braking force were you applying during this?

16 A Well, that's why we use instruments, and that's why
17 we measure that force. I can put a large amount of force in
18 if I want to. But what I'm trying to do here is put in a
19 smaller amount of force than I'm capable of doing, and we
20 measure that force so there is norm ambiguity about what it
21 is. You can see the pumping action. This line is about 20
22 pounds, so the first pump, which is this peak and the black
23 trace is a little less than 20 pounds. The second pump is a
24 little less than 40 pounds, maybe about 35 pounds, and the
25 third pump is little over 40 pounds.

1 So I'm increasing a little bit each time as I am
2 pumping the brake pedal. Now, part of that is that when you
3 have your foot moving back and forth there is inertia to
4 your foot. It is a little bit hard to apply it and stop it
5 without traveling into the brake pedal. So what you see is
6 pump, pump, pump, little more each time.

7 Q Is there more data on this run?

8 A We have the same diagram that shows the stopping
9 distance. This is the same speed data that we just looked
10 at, but this is plotted versus distance. But you can still
11 see this wavy or staircase characteristic that we saw more
12 clearly in the time data. It shows up in this data as well.
13 So when the brake is pumped, the vehicle speed is dropping
14 and leveling out; pump, dropping; leveling out, and apply it
15 again and dropping, and the vehicle stops at this point on
16 the ramp.

17 Q Anything else on test number 14?

18 A I think that's it.

19 Q Did you do yet another test involving pumping of the
20 brake?

21 A I did. I did a test where I pumped it even more,
22 actually one more time, to look at the same results.

23 Q And that's test number what?

24 A Fifteen. Yes. Again, while I'm holding the
25 accelerator pedal position, holding the throttle open and

1 applying the brakes in a pumping fashion. with my right
2 foot, I'm holding the accelerator pedal in position which
3 holds the throttle open, exiting onto the ramp. Then we
4 begin applying the brake, release, apply, release, apply,
5 release, apply. And you see the vehicle slowing, slowing,
6 slowing. And ultimately, comes to a stop right there by the
7 green highway sign.

8 Q what is the difference between this run and the one
9 that we just saw before it?

10 A More pumping of the brake pedal.

11 Q Okay.

12 A Again, a view. As the brakes are applied, the
13 vehicle decelerates and ultimately comes to a stop.

14 Q Did you plot data for this run as well?

15 A Yes. So we look at the throttle. Again, you see the
16 same throttle type curve where I'm trying to hold it steady
17 at about 15 to 20 percent, then you see the speed. And you
18 see from the pumps the same stair step characteristic of the
19 speed trace. Every time the brakes are applied, the speed
20 drops, levels off when they're released.

21 So what the driver feels is a decelerating vehicle
22 when the brakes are applied, but no deceleration when
23 they're released.

24 Q So you are pumping more on this run than on the one
25 before it, then what about the brake force in this one as

1 compared to the run before?

2 A Well, it is similar, but it is a little greater at
3 the end here. But you can see again we're increasing in
4 force as we go. We started out at about 15 pounds. You see
5 each pump is an increase in force, increase in force. Then
6 up I think in this case -- I have a hard time reading that
7 -- about 55 pounds I believe. But I actually drop the force
8 off down below 40 pounds, then increase it at the end
9 ultimately to stop the vehicle. And that force is between
10 60 and 70 pounds. Keep in mind at point the speed is about
11 two miles per hour. So the vehicle is effectively stopped.

12 Q Well, is this level of brake force meaningful and
13 reasonable given the circumstances of this crash that this
14 lawsuit concerns and the driver that we have?

15 A I think so. Yes.

16 Q Why is that?

17 A Well, I don't want to try to put in a force that is
18 too great and a force that is beyond the capability of the
19 driver. So my attempt here is to try to see the vehicle
20 response with the throttle open but putting in a small or
21 moderate amount of brake pedal force.

22 Q Anything else on number 15?

23 A Again, we show a graph of the travel of the vehicle?
24 You can see the wavy nature or the staircase nature of the
25 speed as it is dropping. Of course, it is decreasing when

1 the brakes are applied, but the overall distance is plotted
2 here from the start point that we are showing on the diagram
3 to the point of rest of the vehicle, comes to rest near the
4 highway sign.

5 Q Okay. Does that conclude test 15 do you think?

6 A Yes, it does.

7 Q We will move to a different kind of testing now that
8 you were also involved in out there at the scene. Before we
9 get into that, and that's test 7 I think.

10 A Yes, it is.

11 Q All right. Before we get into that, would it be
12 helpful to you to either recap what we have seen with the
13 other testing with the model or set up what we're going to
14 see in the coming test?

15 A Well, I would like to recap with the model. And I
16 would like to discuss just to give an idea of the distances
17 and the position of the vehicle in the braking test.

18 MR. JENNINGS: Can we take a moment for that?

19 THE COURT: Yes.

20 Q (By Mr. Jennings) Step down, if you would, please,
21 sir. Tell us what you say we demonstrated for them what we
22 now know from your testing.

23 A Okay. I will place one of these vehicles back at the
24 start of the tire mark. And what I would like to do is just
25 demonstrate the distance that's involved in this ramp. I've

1 discussed it a little bit, it is over 1,000 feet of
2 distance. But in the runs where I have the vehicle throttle
3 held open, I'm beginning to apply the brakes right in this
4 area here, meaning the area between the gore point and the
5 40 mile per hour advisory sign.

6 So the brakes are applied in that area on average,
7 the throttle cell open. But with the distance that is
8 involved in this ramp, the vehicle never makes it down to
9 the base of the ramp. In fact, most of the runs were
10 stopped short of the highway sign, which is shown here. The
11 vehicle stops short of the highway sign. I think in one of
12 the runs it went just past the highway sign.

13 What I determined from these tests is that if you
14 hold the throttle open and you apply the brakes, even with a
15 minimal kind of force, the vehicle can be stopped over this
16 distance and stopped well before we have any of the evidence
17 that we know from the actual crash scene, which is down by
18 the area of the intersection.

19 Q Okay. Thank you. Let's talk about one final test.
20 It is number 7.

21 A Okay. We will show the video for number 7.

22 Q Let me ask this first: As you know there has been
23 talk in this case about the possibility of the driver, Mrs.
24 Bookout, pumping the accelerator. Does that fact, that
25 evidence, relate to the testing that you are about to tell

1 us about?

2 A Yes, it does. What I did is I looked at the
3 testimony from Ms. Bookout of pumping the brakes. And I
4 looked at it in terms of the plaintiffs' theory that the
5 throttle was somehow stuck open. Now, I looked at the
6 throttle components of this vehicle, and I don't believe
7 that it would malfunction in a way to stick open.

8 But I looked at it in that context, if the throttle
9 was stuck open and the brakes were applied in a pumping
10 fashion, what would the results be. And I have shown the
11 test of those results. What find is that the vehicles slows
12 and stops, the brakes will still stop the vehicle even when
13 pumping.

14 So with that testimony, and with that information
15 from the testing, I've got result that didn't match the
16 reconstruction. So as we know, the vehicle didn't stop on
17 the ramp. We know the vehicle continued the entire distance
18 of the ramp and was still going at a significant speed near
19 the intersection.

20 What I did is I looked at a scenario where instead
21 of pumping the brake pedal I was pumping the accelerator
22 pedal as I'm coming down the ramp. Now, that would be a
23 condition where the driver thinks they're pumping the brake
24 pedal and they are indeed pumping a pedal, they are just
25 mistakingly pumping the accelerator pedal. And I wanted to

1 see the results of those types of inputs on this vehicle in
2 this environment.

3 Q Let's take look.

4 A So I'm driving in at about 70 miles per hour holding
5 the accelerator pedal. What I'm going to do when I get on
6 the ramp is slow with the brake to 40 miles per hour, which
7 is the advisory speed. When I reach 40 miles per hour, I
8 will then begin pumping the accelerator pedal, just applying
9 the pedal in a pumping fashion on and off and on and off.

10 And what I found is what you would expect to find
11 when the accelerator pedal is depressed the vehicle
12 accelerates. Now, the overall acceleration is less than
13 full throttle acceleration because you're applying and
14 releasing the pedal. But the net effect is that the vehicle
15 speed does increase.

16 Now, if you recall from Ms. Bookout's testimony,
17 her testimony was that the brakes were applied then they
18 were pumped. And in those instances, the vehicle speed
19 increased or continued to get faster. So this scenario I
20 think is consistent with a driver pumping a pedal, not the
21 brake pedal because the brake pedal slows the vehicle, but
22 pumping the accelerator pedal.

23 Q Even after pumping the accelerator pedal, what
24 happened?

25 A Well, when you pump the accelerator pedal, the

1 vehicle speed increases.

2 Q Were you ultimately able to bring the vehicle to a
3 stop?

4 A When I released the accelerator pedal and applied the
5 brakes, the vehicle slowed and stopped in a normal fashion.

6 Q So even if Ms. Bookout had pumped the accelerator, if
7 she stopped pumping the accelerator and applied brake, the
8 vehicle would still stop?

9 A That's right.

10 Q This is another view.

11 A This is another view. I will slow the vehicle. You
12 can see I'm pressing on the brake pedal slowing the vehicle
13 to about 40 miles per hour and then begin pumping the
14 accelerator pedal. You watch the speed, increase, increase,
15 increase while the pedal is pumped. Now the brakes are
16 applied. Of course now I'm on the other side of Texana
17 Road, and the vehicle is controllable and stops.

18 Q Did you graph this data too?

19 A I did. Yes.

20 Q Okay.

21 A So now we have seen a lot of constant accelerator
22 pedal position charts where we have 10 to 20 percent orange
23 line all the way across. Now you can you see the
24 difference. We get the 10 to 20 percent position coming in,
25 but then the throttle is dropped, the accelerator pedal is

1 released while the vehicle is slowed to 40 miles per hour.
2 At that point, the pumping of the accelerator pedal comes
3 in. You see the pump, release, apply, release, apply,
4 release. I think this is six times of pumping, applying the
5 accelerator pedal and releasing it.

6 Now we show the response in speed. Again, we're a
7 constant 70 miles per hour, slow to 40 miles per hour. Then
8 when the accelerator pedal is applied and released in a
9 pumping fashion, you see the accelerator of the vehicle, the
10 speed is increasing during that period. Once it is released
11 and the brakes are applied, once it is released and the
12 brakes are applied, the vehicle speed drops down to zero and
13 stops. And that force for the final apply is less than 20
14 pounds.

15 Q And did you lay this over the scene diagram as well?

16 A I did. Yes. What this shows is the deceleration of
17 the vehicle down to 40 miles per hour; that's where the
18 pumping of the accelerator pedal begins. And you see the
19 increase in speed. Now, it is not as rapid as the full
20 throttle acceleration, but it is an increase in speed with
21 the pumping of the accelerator pedal.

22 Q So does that tell us about test 7?

23 A Yes, it does.

24 Q Let me ask this just to wrap this up. We have taken
25 a lot of time here to talk about the testing that you did

1 out there at the site. What to you, as an accident
2 reconstruction expert, is the bottom line of this testing?
3 What do we know from this?

4 A Well, we know from the accident reconstruction that
5 the vehicle was traveling at a significant speed near the
6 bottom of the ramp. We have the testimony from Ms. Bookout
7 of the actions that she believes she took as a driver in
8 that vehicle coming off the highway and onto the ramp. I've
9 conducted tests that show the performance of the vehicle
10 with those types of inputs.

11 What I found was when the brakes are applied they
12 overpower the engine and they stop the vehicle on the ramp.
13 The vehicle won't traverse or continue on to the point that
14 we know it was in the reconstruction. So my belief is that
15 the brakes were mostly likely applied early on the ramp, as
16 she testified to slow the vehicle, and at that point, the
17 accelerator pedal was depressed and released in a pumping
18 fashion causing the vehicle to begin to accelerate back up
19 to the point we have the braking tire marks. At that point,
20 the brakes were applied. But at that point, the vehicle was
21 traveling too high a speed for its position for her to be
22 able to stop the vehicle before it crashed.

23 Q You mentioned the tire marks, the long one being the
24 150 foot tire mark. And we talked briefly about that this
25 morning. You told me, as I recall, that you thought that

1 was caused by the application of the foot brake, the service
2 brake, right?

3 A Yes.

4 Q Are you aware of scientific literature out there that
5 relates to the question of the kind of tire marks that can
6 be created by ABS-equipped brakes?

7 A Somewhat. Yes.

8 Q Are you aware of testing that has been done in this
9 case, principally by Mr. James Walker, that relates to the
10 application of the service brake and the tire marks that are
11 created by doing that?

12 A Yes, I am.

13 Q All right. And is that -- are the results of those
14 tests consistent with your opinions and the work that you
15 have done in this case?

16 A I believe they are. Yes.

17 Q We know from your reconstruction and from the path
18 the vehicle took that it went straight, it did not spin out
19 in what some have called a bootleggers turn. Are you aware
20 of testing that has been done in this case by Mr. Walker,
21 and Mr. James Walker, concerning the application of the
22 parking brake and what happens when the parking brake is
23 applied in circumstances like we have in this case?

24 A Yes, I am. I participated in that testing as well.

25 Q Generally speaking in a word or two, the result in

1 terms of the path of the vehicle was what?

2 A Well, in a word or two, the path of the vehicle was
3 that it spun. It did not continue in a straight path.

4 Q We will talk about that more with Mr. Walker. Let's
5 wrap up, Mr. Stopschinski. You started out your testimony
6 today by telling us what -- giving us the overview of your
7 opinions. You have now told us the work that you did, and
8 so we're back where we started out in terms of the opinions
9 that you have. What was your number one opinion, sir?

10 A That before the crash, during the crash, and after
11 the crash the vehicle throttle control system and braking
12 systems functioned normally.

13 Q Does the work that you have done and told this jury
14 about support that view?

15 A Yes. I believe it is consistent with my results.

16 Q And the second opinion you hold, sir, is what?

17 A Is that -- and we covered this in detail -- is that
18 the function and the design of the braking system on the
19 vehicle is such that the vehicle will not accelerator with
20 the brakes depressed.

21 Q Does the work you have done and all you told the jury
22 today support that view?

23 A Yes.

24 Q And your third opinion, sir?

25 A The third opinion is, which I just described, is that

1 the cause of the crash, the most likely cause of the crash,
2 is that the driver, Ms. Bookout, failed to control the speed
3 of her vehicle coming down the ramp, and the direction of
4 her vehicle, causing it to cross the intersection and crash.

5 MR. JENNINGS: Thank you, sir. Thank you, Judge.

6 THE COURT: Cross-exam.

7 CROSS-EXAMINATION

8 BY MR. BEASLEY:

9 Q Good afternoon.

10 A Good afternoon.

11 Q I've got a few questions. Probably more than a few.
12 I think I remember you told us how long you been with Carr
13 Engineering; am I correct?

14 A Yes.

15 Q What was that number of years?

16 A About 25 years.

17 Q And how many cases have you been listed as an expert
18 where Toyota was being sued over a defective product,
19 defective automobile or some component part in that car?
20 How many cases?

21 A I don't know the exact number.

22 Q Give us an approximate number. I know you're a
23 detailed guy. I picked that up from your slides. Tell the
24 jury how many cases. You know how many cases.

25 A Well, I said I don't know the exact number. I would

1 just be making an estimate. My estimate is maybe -- how
2 many in total?

3 Q Total.

4 A Over the 25 years?

5 Q Yes, 25 years is a good way to start?

6 A I would say on the order of maybe 50 or so cases.

7 Q How about in the last five years?

8 A Maybe 20 or so.

9 Q How about in the last two years?

10 A I'm still guessing here. I don't know. I would say
11 maybe 20 or so.

12 Q Okay. How many of those cases involved a crash of a
13 car, a Toyota car, that involved an unexpected acceleration?

14 A How many of those cases?

15 Q Yes.

16 A I would say maybe about 70 percent.

17 Q And that 70 percent would be how many?

18 A Well, I'm not sure the exact number.

19 Q Give us an approximate number.

20 A Well, we can use the numbers we're talking about, so
21 maybe on the order of 40 or so.

22 Q So you yourself have been involved in 40 cases where
23 the allegation was unexpected acceleration that caused
24 either an injury or a death; am I correct?

25 A Well, they were case, yes, that were filed.

1 Q I'm going to back up. I was going to do this later,
2 but I'm going to do it now while it is on my mind. You
3 talked about the service brakes leaving skid marks?

4 A Well, I talked about the tire marks I believe are
5 created by the service brakes.

6 Q Troopers call them skid marks, you call them tire
7 marks. Is there a difference?

8 A Well, there could be.

9 Q Well, tell the jury who Lee Carr is. I believe he is
10 the senior member of your group?

11 A He is the owner of the company. He started the
12 company. His name is Lee Carr. His name is on the company.

13 Q Do you recall what Mr. Carr testified in the case
14 that -- you were in the Van Alfen case, weren't you?

15 A I did some support work in the Van Alfen case. I did
16 not provide any testimony in that case.

17 Q Are you aware that the jury has heard testimony about
18 the Van Alfen case, what we call an OSI or a similar
19 incident?

20 A I'm aware that yes to some level, but I don't know
21 the details of what has been heard.

22 Q Are you aware that Mr. Lee Carr, the top man in your
23 firm testified in that case that told it different than what
24 you told the jury about today about service brakes leaving
25 skid marks?

1 A Maybe you can --

2 Q I will show it to you. Would you like to see it?

3 A -- show it to me.

4 Q And the Van Alfen case involved a sudden
5 acceleration; am I correct?

6 A No.

7 Q Sir?

8 A No, sir.

9 Q What was the allegation in that case?

10 A Well, the allegation may have been a sudden
11 acceleration, but the crash did not involve an acceleration
12 at all. It was a vehicle that was coming off an exit ramp
13 and slowed and speed and continued to slow and speed all the
14 way to the point of impact.

15 Q This is Mr. Carr testifying:

16 "Question: You note in your report there were no tire
17 marks related to the crash recorded by the police in the
18 pavement of the off-ramp or through the intersection of
19 the off-ramp and Aria Boulevard; is that right?

20 "Yes.

21 "Were you expecting to see some tire marks?

22 "No.

23 "Why do you note that?

24 "I considered all the evidence and I considered lack of
25 evidence in areas that might have been some importance.

1 It reflects the process that I followed.

2 "In your view is the lack of tire marks, or is the lack
3 of tire marks consistent with the braking or not
4 braking?

5 "Answer: On this vehicle, you wouldn't expect tire
6 marks no matter what."

7 Now, am I correct that vehicle was equipped with
8 antilock braking system?

9 A I believe it was. Yes. But we also had evidence in
10 that matter showing that there was no brake applied. That
11 was a newer generation Camry which was equipped with a data
12 recorder, a black box recorder, that recorded crash
13 information. The crash information in that generation
14 actually provides information prior to the impact.

15 The information included is the accelerator pedal
16 position, whether the brakes were on or off or not, the
17 engine speed and the vehicle speed. All of that data was
18 available for the Van Alfen crash. What the data showed was
19 that the vehicle was in a coasting-type deceleration. You
20 may remember I showed a test run on this exit ramp where the
21 vehicle was allowed to coast, and the speed dropped slowly
22 as a slow rate, not like a braking deceleration but at a
23 slow rate.

24 The EDR data or the data from the crash in the Van
25 Alfen matter showed the exact same type of rate, a

1 coasting-type rate. It also showed on the pedal application
2 that there was no accelerator pedal application and that
3 there was no brake pedal application. So one would not
4 expect to see tire marks in the Van Alfen matter, in the Van
5 Alfen crash related to the crash vehicle.

6 Number one, the vehicle was decelerating at a
7 coasting rate. And number two, the brakes weren't even
8 applied.

9 Q You did tell the jury this was a Camry; is that
10 correct?

11 A I did tell them.

12 Q By Toyota. Before we get to this, I want you to go
13 back and tell us a little bit about Carr Engineering. In
14 the direct examination, you were asked approximately how
15 much Toyota had paid Carr Engineering, and you said a few
16 million dollars if I remember correctly.

17 Let's go through and see what -- before we get into
18 that, Toyota is not the only automobile client that you're
19 involved with and in providing expert testimony in cases
20 where they have been sued for defective automobiles; am I
21 correct?

22 A Well --

23 Q The question is are they only ones?

24 A Well, right. But the description of that question
25 was incorrect, so the premise was incorrect. The main

1 avenue that Carr Engineering is hired for crash
2 investigation is through attorneys representing, for the
3 most part, vehicle manufacturers such as Toyota. So it is
4 the attorneys that make the decision on engaging Carr
5 Engineering in a project.

6 And Car Engineering is a consulting engineering
7 company that analyzes matters analyzes crashes, analyzes
8 vehicles and provides the results of those analyses.

9 Q Apparently you didn't understand my question. My
10 question is: How many other automobile manufactures does
11 your company provide expert testimony for?

12 A Well, it's not that we provide expert testimony, it
13 is that we provide analysis of vehicles and analysis of
14 crashes.

15 Q Well, how many?

16 A Okay. How many is over the years virtually all of
17 the manufacturers.

18 Q So this would only be one company. Let's go down and
19 see how much they paid you starting in the year 2003, 1.4
20 million plus; 2004, 2.1 million plus; 2005, 1.8 million
21 plus; 2006, 2.5 million plus; 2007, 2.1 million plus; 2008,
22 1.5 million plus; 2009, 2.1 million plus; 2010, 2.2 million
23 plus.

24 Now, this is just about the time that the
25 litigation really started really heating up over the

1 unexpected accelerations; am I correct, 2009, 2010?

2 A I believe that's probably correct.

3 Q And so in the year 2011 -- well, 2010 it is 2.2
4 million plus. In 2011 over 5 million; 2012, 6.7 million
5 plus; 2013, how far along this year would that number be?

6 A Well, I'm not sure. I'm not sure how current the
7 data is.

8 Q Well, Toyota supplied it to us, so you would have to
9 question them not me.

10 A I'm not sure if the date would have been included on
11 what was supplied to you or. Not I have seen these numbers
12 briefly, and I don't recall if it was just the first half of
13 2013 or it was further along in this year.

14 Q And the number of cases definitely increased
15 terrifically all over the country; am I correct?

16 A Well, I don't have access to how many cases are filed
17 against Toyota, but I can tell you that the number of cases
18 on which we were hired increased during those times. And
19 therefore, a larger percent of our workload shifted to
20 Toyota work; therefore, we had more billable time and more
21 man hours spent on more projects and that's why you see the
22 increase in the numbers.

23 Q We did a little bit of calculation on this number for
24 each of those years. Taking your hourly charge and the
25 number of engineers that you have in your firm, if you

1 billed out at your hourly rate, you would have exhausted the
2 entire week every week of that year. Were you aware of
3 that?

4 MR. JENNINGS: Just a brief interruption to
5 objection on the same grounds previously stated and also for
6 the fact that we're not talking about fees here in this
7 exhibit. It is a mistake.

8 THE COURT: Overruled. And no speaking objections.
9 Thank you.

10 Q (By Mr. Beasley) Am I correct that some engineer
11 from Car Engineering has been involved in every single
12 Toyota unexpected acceleration case that has been filed over
13 the last two years?

14 A I don't know.

15 Q Let's go over just a few basic principles. You
16 talked about safety and accident reconstruction. You even
17 discussed the throttle system. Let's talk a little bit
18 about general principles that apply in cases like this, in
19 product liability litigation.

20 Am I correct that safety has to be a top priority
21 in the design, the manufacturing, and also the sale of
22 products, including automobiles?

23 A Well, I think products should be designed to be safe.
24 Yes. Including automobile.

25 Q And that consumers are entitled to expect that

1 automobiles that they buy will be reasonably safe?

2 A I believe that's correct. Yes.

3 Q If a carmaker knows about a defective product, say a
4 software issue in a throttle system, do they have a duty to
5 inform the federal government, in this case NHTSA?

6 A It depends.

7 Q If they know they have a defect, don't they have an
8 obligation to notify NHTSA?

9 MR. BIBB: Objection, Judge. Outside the scope of
10 direct examination.

11 THE COURT: Sustained.

12 Q (By Mr. Beasley) Does -- assuming those same facts,
13 if a company knows of a defect, do they have an obligation
14 to inform the public?

15 MR. JENNINGS: Same objection, Judge.

16 THE COURT: Sustained. This is outside his direct.

17 Q (By Mr. Beasley) Now, have you looked at any of the
18 advertisements that Toyota has used on the Camry?

19 MR. JENNINGS: Same objection, Judge.

20 THE COURT: Let me see if he can tie this one in.

21 Q (By Mr. Beasley) Specifically talking about safety
22 issues.

23 A I may have seen some of that. I don't recall
24 anything specifically.

25 Q would you be surprised to learn that Toyota has said

1 that the Camry is a perfect car and completely safe?

2 MR. JENNINGS: Same objection.

3 THE COURT: Sustained. Outside the scope.

4 Q (By Mr. Beasley) You mentioned the electric throttle
5 system for the Camry, and I believe you told us that they
6 shifted over from the manual, the old mechanical system
7 where you had the cable; is that correct?

8 A Yes. This vehicle is an electronic throttle control
9 system vehicle.

10 Q In the start of the case, you talked about a few
11 things that jury would ultimately hear about in this case.
12 And I think you started off about talking about the
13 introduction of the electronic throttle system; am I
14 correct; and that would be approximately the year 2000,
15 2001, 2002 when the cars were being equipped with the new
16 system?

17 A In general, yes, I think that's true.

18 Q Were you aware that NHTSA told Toyota that 400
19 percent increase were occurring in sudden acceleration
20 complaints after they went over to the new system?

21 MR. JENNINGS: Judge, objection. Outside the scope
22 of direct examination.

23 THE COURT: Sustained. Counsel, please approach.

24 (The following bench conference was had outside the
25 hearing of the jury:)

1 THE COURT: Mr. Beasley, where are we going with
2 this witness on all the safety questions?

3 MR. BEASLEY: Well, he is an accident
4 reconstructionist, and he can have safety issue opinions.

5 THE COURT: He didn't give any opinions about
6 safety in this. He just talked about reconstructing the
7 accident, though.

8 MR. BEASLEY: But he talked about the -- he said
9 the system worked exactly as it was designed to work,
10 specific to the throttle system; that was his opinion.

11 MR. JENNINGS: The questions he's asking don't have
12 anything to do with the witness's reconstruction at all.
13 It's completely --

14 THE COURT: I tend to agree. You can ask him, if
15 you want to, his basis for why he this it worked as it is.
16 We need to get back to what he actually is here for.

17 MR. BEASLEY: Okay.

18 (Within hearing of the jury:)

19 Q (By Mr. Beasley) You read a number of depositions, I
20 believe you told the court; am I correct?

21 A Yes, I did.

22 Q Did you read the deposition which the jury heard, the
23 trial deposition of Katherine Western?

24 A Did I read the trial transcript?

25 Q Either that or her deposition?

1 A The deposition testimony I did read. Yes.

2 Q Were you aware of the statements that she told this
3 jury what Ms. Schwarz, the passenger, told her, for example,
4 about how Ms. Bookout had tried to stop the car as they went
5 down the exit first by applying the brakes and then pumping
6 the brakes and then ultimately pulling the hand brake or the
7 emergency brake?

8 A My recollection of the deposition testimony is that
9 Ms. Schwarz indicated that she told Ms. Bookout to stop the
10 vehicle. And Ms. Bookout said she was trying to, something
11 along those lines.

12 Q You don't recall her telling about the pumping of the
13 brakes?

14 A From Mrs. Schwarz?

15 Q Correct.

16 A No, I don't recall that.

17 Q Do you recall that Ms. Western said that Ms. Schwarz
18 told her that Ms. Bookout pulled the emergency brake?

19 A My recollection was that Ms. Western was standing on
20 the right side of the vehicle and thought she saw that the
21 parking brake lever had been actuated.

22 Q And you don't recall that Ms. Schwarz told her about
23 the pulling of the brakes, pulling of the hand brake?

24 A It was something like she told Ms. Bookout to stop
25 the vehicle; that's what I recall.

1 Q Now, did you -- have you read the trial transcript of
2 Trooper Duerson, the trooper who actually did the scene
3 measurements?

4 A I have not. I read his deposition. Of course, I met
5 with him out at the scene.

6 Q Would you be surprised to learn that his trial
7 testimony does not coincide with what you told the jury
8 about your -- some of your, for example, measurements?

9 A I would have to look at the testimony.

10 Q Are you aware that Trooper Duerson measured the 150
11 feet of skid marks and he described them as prominent, heavy
12 and dark from the right rear tire back to the --

13 A Right. That would be the skid mark from the right
14 side.

15 Q Shows 25 feet here; am I correct? Here to the fog
16 line?

17 A Well, it is 150 feet.

18 Q The question I'm asking, doesn't he show 25 feet from
19 this point to this point?

20 A I'm not sure who created that diagram. Looks like it
21 has an overlay with typed numbers on it.

22 Q Well, it's the trooper's diagram, and it was done
23 during the deposition, where parties from both sides were
24 there with the trooper.

25 A Correct.

1 Q This is his testimony. He says 25 feet from this
2 point to this point, which is the fog line. An additional
3 24 feet, and then an additional 101 feet on the paved
4 portion.

5 A Well, if that's what he says, but it looks like the
6 number have been typed over. That's what the typed numbers
7 said.

8 Q Well, he testified in this court and was very clear
9 those were his actual measurements and giving a total of 150
10 feet. Nobody told you that?

11 A Well, I understand 150 feet is the measurement that
12 he provided in the police report, and that is the
13 measurement that he made on the tire mark.

14 Q These don't comply or agree with the measurements
15 that you made, do they, as far as, for example, the 101?

16 A No. Not from that length of the edge of Texana Road.
17 The measurement I used is 150 feet. And we used it from the
18 area of the gouging of the vehicle, the impact of the
19 vehicle where it entered into the gouge.

20 Q Trooper Duerson told the jury that he measured from
21 the -- directly from the right rear tire back to the start
22 of the skid mark. Isn't that exactly what -- had you been
23 told that?

24 A Yes. And I believe that's right. If you look at the
25 vehicle shape that you see there, that would be a vehicle

1 shape at the point of impact with the gouge; that wouldn't
2 be a vehicle shape, that would be point of rest. Now, the
3 vehicle shape at the point of rest would be further along,
4 so you would have to take that into account.

5 Q Would you be surprised to learn that Trooper Duerson
6 did not agree with that positioning that you had on the
7 point of rest that you showed on your diagram?

8 A I would have to look at what he said about that. I
9 met with him at the scene, and we discussed that.

10 Q Well, he also testified before this jury. You're
11 aware of that, aren't you, he told them exactly how he
12 measured it, exactly where the vehicle were, exactly where
13 the point of rest was; didn't you know that?

14 A I know he testified. But as I said, I haven't
15 reviewed that testimony. But we discussed at the scene the
16 point of impact and the point of rest of the vehicle. What
17 I was told, clearly, was that the vehicle impacted at the
18 gouge and continued up the hill somewhat.

19 Q But the question to you is: That is not what he told
20 this jury under oath either in his deposition or live in
21 this courtroom; aren't you aware of that?

22 A Well, again, I did not hear his or read his testimony
23 in the courtroom.

24 Q In fact, I believe that he did discuss the meetings
25 with you. As I remember correctly, what he told the jury

1 was that you were all concerned about the skid marks, the
2 150 foot, especially the skid marks on the pavement and the
3 fact that there was 150 of heavy, prominent dark skid marks
4 from one tire, the right rear tire; isn't that exactly what
5 these folks have told you?

6 A Well, let's be clear about what he said about the
7 tire mark. You used the word "dark." I don't think he ever
8 used the word dark to describe the tire mark. You used the
9 word "heavy." I think he described in his deposition as
10 pretty heavy. When I met with him at the scene, I asked him
11 about the tire mark, and he described them to me as light in
12 character. He also described them as a scratching-type
13 mark. So that's the description I have of the mark.

14 Q I'm going to show you exactly what he said under oath
15 to this jury. Let's see if we can bring that up.

16 "Would you tell the jury exactly , first of all, were
17 the skid marks heavy or light? would you describe them?

18 "Prominent. They were there. I could see them, six
19 years ago. I mean. I would say they were dark.

20 "Dark?

21 "They were enough there that you didn't confuse them
22 with anything else.

23 "In fact, if you said in your deposition that they were
24 pretty heavy would that be an accurate description?

25 "Yes, sir."

1 You hadn't read that?

2 A No, I haven't read that precisely. But I read his
3 deposition testimony, and that's similar to what he said.
4 And I understand that he called the marks prominent. And I
5 believe that the marks would appear to be prominent. Keep
6 in mind he is looking at a scene where the tire mark is
7 leading off the roadway, and it is leading into a gouge
8 where a crash has just occurred. And there is a vehicle in
9 the area, a crashed vehicle. And I would think the marks
10 would appear to be prominent.

11 Q When you were out there, you were concerned about the
12 fact that this car had left only on the right tire 150 feet
13 with 125 dark, heavy prominent skid marks from one tire; am
14 I correct?

15 A When we met with the trooper, I was interested in any
16 available information I could get related to the crash.
17 Part of that was the tire marks, the way he had drawn the
18 tire marks and the way he described and measured the tire
19 marks. So I was interested in that, just the way that I was
20 interested in all the other facts.

21 Q And he told us that the skid marks were in a straight
22 line; am I correct?

23 A I believe he said that. Yes.

24 Q There was one real big difference, if I remember
25 correctly, between what Trooper Duerson told the jury and

1 what you stated. Did Trooper Duerson put the point of rest
2 of the Camry 25 feet from the point, from the edge of the
3 pavement?

4 A Well, we just talked about that. In his diagram, he
5 shows one vehicle at the point of impact. He has a small
6 impact mark and he has a vehicle at the point of impact. We
7 know the vehicle impacted the embankment and continued
8 upwards. You can see that by the gouging of the earth. You
9 can see the lines in the dirt continuing upward. So the
10 point of impact with the embankment and the point of rest
11 with the embankment were not the same point.

12 When he showed his diagram, he is showing a point
13 of impact of the vehicle, and he is indicating a measurement
14 from there. I think, and I think it is based on common
15 sense, is that he would measure from the point of rest to
16 the vehicle. The point where the vehicle ended up would be
17 what he saw when he arrived at the scene, and that's where
18 the measurements were made from.

19 Q If he said that the measurements were made from the
20 right rear tire, point of rest, back to the various points
21 he laid out making up the point of 150 yards, that would be
22 correct, wouldn't it?

23 A Not 150 yards, 150 feet. I think that's what he
24 said. Yes.

25 Q And they were a straight line?

1 A He described them as being straight. And I think at
2 one point they were described as being mostly straight, or
3 pretty straight.

4 Q Let's see the differences between you and Mr. McCort
5 on the reconstruction that the two of you did. Mr. McCort
6 said the Camry was going 65 when it came off the exit. Is
7 that approximately correct?

8 A Well, we don't know the speed at that point. But the
9 speed --

10 Q That is the speed everybody has used, though; am I
11 correct?

12 A Well, the speed on the interstate is 70 miles per
13 hour and she said that she slowed by applying the brakes.
14 She slowed somewhat to make the turn.

15 Q Mr. McCort also said that the start of the skid mark
16 on the roadway, the speed of the Camry would have been about
17 40 miles an hour; is that correct as to what he said?

18 A At the start of the tire marks?

19 Q Yeah.

20 A I think he said 40 to 45 miles an hour.

21 Q But you have given in your deposition and several
22 different speeds at that point, have you not?

23 A Well, I looked at scenarios. Yes. That's what I
24 described.

25 Q In fact, I believe Mr. Bibb told the jury in his

1 opening statement the speed was somewhere between 50 and 60
2 miles an hour. Would you agree with that point?

3 A I think the most reasonable speed is at the lower end
4 of my scenarios, so that's why I showed today approximately
5 50 miles per hour.

6 Q In fact, two other Toyota experts, Mr. Young and Mr.
7 walker, have told us in depositions that you told them the
8 speed at the start of the skid marks was just 40 miles an
9 hour; is that not correct?

10 A That's not what I would have told them. No.

11 Q Do you recall discussing -- in fact, they said that
12 they based their opinions on your reconstruction speed; are
13 you aware of that?

14 A I don't know that I've read that specifically, but I
15 wouldn't be surprised at that.

16 Q Would you be shocked if they did say that you told
17 them -- in fact, we asked you this in your deposition I
18 believe -- that you told them that the speed was in the area
19 of 40 to 45 miles an hour?

20 A At the start of the tire marks?

21 Q Yes.

22 A No. I would not have had that speed.

23 Q If Ms. Bookout, as Ms. Western related the
24 conversation with Ms. Schwarz said, that Ms. Bookout had
25 pumped the brakes six, seven, eight times before she pulled

1 the hand brake would that sound logical or reasonable to
2 you?

3 A would that sound logical to me?

4 Q well, let's back up. Not logical, necessarily.

5 Assume that she was pumping the brakes, that she applies the
6 service brake, does not get a significant relief, and then
7 she pumps the service brakes six to eight times before
8 pulling the hand brake. Can we agree that was the testimony
9 of Ms. Western?

10 A I can't say that I recall that from Ms. Western. No.

11 Q Did you account at all for Ms. Western's testimony
12 about the pulling of the hand brakes and the fact that she
13 saw the hand brake in an up position in the car?

14 A well, I looked at the -- of course, I'm familiar with
15 Mr. McCort's reconstruction where he believes that the hand
16 brake was pulled, and I looked at that. What I determined
17 is that it is not likely that hand brake was pulled causing
18 that mark because the vehicle, based upon the dynamics of
19 pulling the hand brake and locking the rear wheels, would
20 indeed spin out.

21 This vehicle is in a right turn. It is clear that
22 the vehicle is steered to the right prior to the initiation
23 of the tire marks; that is clear from the physical evidence.
24 This vehicle would spin out if the hand brake was pulled.

25 Q You're aware that if you pumps the braking

1 significantly that it will deplete the vacuum and take away
2 the brake assist which weakens the braking capacity of the
3 automobile?

4 A Well, it depends on the condition; that is not always
5 the case.

6 Q Assume that it happened in this case in the scenarios
7 that you told the jury about, 65 miles an hour coming off,
8 slows down, and starts applying the brakes. Doesn't work,
9 goes to pumping, doesn't work, and then pulls the hand
10 brake. Isn't that exactly what Ms. Western told this jury?

11 A Well, I'm not familiar with that information from Ms.
12 Western, but I did those same types of runs with this
13 vehicle. And the premise of your question is not reasonable
14 with the operation of the vehicle. What I found is that you
15 come down and you press the brakes and they do work and they
16 do slow the vehicle.

17 Q Did you perform any of your vehicle testing with
18 vacuum depleted -- the question is: Did you?

19 A I did pump the brakes, and the vacuum did not
20 deplete. I don't believe that it did.

21 Q So the question is: None of your tests were done
22 with the vacuum depleted in the braking system?

23 A I don't believe they were.

24 Q This comes from the troopers, both deposition
25 testimony and trial testimony. On road, 125 feet by Trooper

1 Duerson; your measurements, which you gave us in deposition,
2 which you conveniently did not tell the jury about, 110
3 feet; am I correct?

4 A Well, I think the 110 feet is the travel distance of
5 the center of gravity of the vehicle in my diagram, so the
6 tire mark length would be different than that.

7 Q The trooper measured from the right rear to the point
8 back where the skid marks started; isn't that correct?

9 A I think that's what he testified to. Yes.

10 Q And then --

11 A From the point of rest, the right rear of the point
12 of rest.

13 Q Off road, Trooper Duerson has the measurements 25
14 feet, you have them 43 feet; am I correct?

15 A I think that's a measurement of the travel of the
16 center of gravity of the vehicle to the point of impact and
17 to the point of rest.

18 Q So --

19 A So that is not comparing the same thing.

20 Q So there is a difference between you and Trooper
21 Duerson as far as the measurements; am I correct?

22 A Well, these aren't comparing the same thing.

23 Q Were you aware that braking efficiency can be reduced
24 by 700 percent by vacuum-depleted brakes?

25 A I haven't made that measurement myself.

1 Q well, you said you were familiar with the
2 literature --

3 A Sure.

4 Q -- a few minutes ago.

5 A Sure.

6 Q Isn't it just replete with information on braking
7 efficiency when the vacuum has been depleted in the braking
8 system?

9 A Well, there is information there, but you asked a
10 specific question about the amount of braking effectiveness
11 reduction.

12 Q Let's assume for this question that the pumping of
13 the brakes depleted the vacuum in the Bookout 2005 Camry.

14 A That's not what I found in my testing.

15 Q Assume that it did, that she did exactly what Ms.
16 Western said Ms. Schwarz told her that she pumped the brakes
17 seven to eight times, in a situation like that, certainly it
18 would have a definite effect on the vacuum; would it not?

19 A Well, potentially it could. It depends on a lot of
20 factors. What I believe is that vacuum would not be
21 depleted when the brakes were applied initially, and the
22 vehicle would slow and stop.

23 Q Assuming for this sake of this question that the
24 vacuum was depleted in this system. Wouldn't it reduce the
25 braking efficiency of that automobile by 700 percent

1 according to the literature?

2 A It depends on the conditions.

3 Q Am I correct that all of your testing proved that if
4 a Camry with properly work software would actually stop; is
5 that correct?

6 A I'm sorry. I didn't understand.

7 Q Is it true that all your testing proved is that a
8 Camry with properly working software would stop the vehicle?

9 A Well, you know, I tested a Camry where I
10 intentionally held the throttle open. I was simulating a
11 stuck throttle condition. What I found was that the brakes
12 still stopped the vehicle.

13 Q But if, in fact, this electronic throttle control
14 system had a problem, and that problem occurred on this
15 particular occasion resulting in an unexpected sudden
16 acceleration, then that would change your entire -- all of
17 your testing that you have done; am I not correct?

18 A No, it would not. In fact, that was the condition I
19 was trying to simulate. That's what I have been explaining.

20 Q In fact, you did not have a sudden acceleration in
21 any of the testing that you performed that occurred without
22 design; am I correct?

23 A Well, the vehicle operated according to its design;
24 that is right. So in order to simulate a stuck throttle
25 condition, I had to intentionally hold the accelerator pedal

1 down.

2 Q Now, am I correct that Toyota has a very, very
3 serious problem with reported instances of sudden
4 accelerations resulting in injury and death all over the
5 country?

6 A I don't know the answer to that. I mean, I haven't
7 seen that kind of data, so how could I answer the question?

8 Q You have been involved in Toyota litigation, and they
9 paid you some, I think pretty large amount of money, to come
10 in and help defend their lawsuits, certainly you would have
11 a general idea on that question, wouldn't you?

12 A Well, again, we're a consulting company, and we work
13 on projects. We charge by the hour for those projects, and
14 we charge by expenses. Now, the numbers you showed up there
15 included this expenses that we incurred, I believe they did,
16 so, you know, we're talking about the amount of projects
17 that we work on. The question that you asked was more
18 global in scale, and I don't have that type of information.
19 So I don't know the answer to it.

20 Q You have been involved in how many yourself
21 personally?

22 A How many cases?

23 Q UA cases?

24 A UA cases I estimated about 40.

25 Q And how about for the entire Lee Carr Engineering

1 task force, the 12 engineers?

2 A Well --

3 Q How many?

4 A It is not a task force, it is a company. It is an
5 engineering company.

6 Q Well, I didn't mean that disrespectfully, I
7 complimenting you. How many unexpected acceleration cases
8 have all of the engineers, including Mr. Lee Carr, been
9 involved in to your knowledge, approximately?

10 A I don't know.

11 Q Your number was what?

12 A About 40.

13 Q And so you're one of the 12, correct?

14 A Well, yes. One of 12 engineers.

15 Q You can't tell us how many the others have had?

16 A I don't know.

17 MR. BEASLEY: That's all.

18 THE COURT: Mr. Jennings.

19 MR. JENNINGS: Yes, ma'am. Just a few quick items.

20 REDIRECT EXAMINATION

21 BY MR. JENNINGS:

22 Q Just a few quick items, Mr. Stopschinski. Is there a
23 difference between taking measurements from the right rear
24 tire of a vehicle and the center of gravity of a vehicle?

25 A Yes.

1 Q where is the center of gravity of a vehicle? Just
2 assuming this is kind of like the car we're talking about in
3 this case.

4 A Well, it is approximately the center of a geometry of
5 the vehicle, so it is about, you know, about at the driver's
6 and passenger's seat back for the front seat. It is about
7 at the center of the vehicle from side to side.

8 Q So if I had a knitting needle and struck it down in
9 through this foam, I could basically indicate where the
10 center of gravity is on this vehicle, somewhere in here,
11 right?

12 A Correct.

13 Q So some distance forward of the right rear tire,
14 maybe seven feet or so?

15 A From the right rear corner maybe that much. Probably
16 less from the right rear tire.

17 Q Okay. When Trooper Duerson took his measurements of
18 the skid marks, the 150 not 175, but 150 foot skid marks, do
19 you know the point from which he took the measurement?

20 A He indicated it was from the right rear tire.

21 Q Not the center of gravity, right?

22 A Correct.

23 Q So were some of the measurements that you took and
24 told the jury about taken from the center of gravity of the
25 vehicle?

1 A Yes. And that is common reconstruction practice.

2 Q To take measurements from the center of gravity?

3 A Yes.

4 Q Well, when you went out to the site with Trooper
5 Duerson, how did you go about actually identifying the
6 beginning point of the mark that he recorded in his report
7 and the ending point of the mark?

8 A Well, we had 150 -- well, we had a tape measure and
9 we strung out 150 feet. And we laid it out. I guess one
10 detail that has not been mentioned is the exact point of the
11 start of the mark was not measured in an X and Y fashion, it
12 was not measured in a specific fashion. So we took the tape
13 measure, we laid it out at the scene, and he indicated where
14 he believed the tire marks started, based upon being out
15 there at the scene, based upon measuring out 150 feet.

16 Q All right. So then did you have an understanding
17 where this mark was when it was laid on the ground and could
18 be seen out there?

19 A That would be my best understanding. Yes.

20 Q This was probably just a matter of misspeaking, and I
21 don't want to make a big thing about it, but did Mrs.
22 western, Katherine western, actually give testimony about
23 pumping the brakes at all?

24 A I said I didn't recall that, and I don't recall that.

25 Q Okay. All right. Couple of other quick things, and

1 you may have alluded to this already. But these numbers
2 that we saw up on the board here, these dollar amounts, do
3 you know what the fees were and what the expenses of the
4 cases were that were just passed through to Toyota or the
5 lawyers hired by Toyota? Do you know what the true numbers
6 are?

7 A No. I haven't seen that data.

8 Q When you gave your deposition in this case, and I
9 think it was back when -- I can get the date -- in fact,
10 last summer sometime -- did you give speeds for this vehicle
11 at various locations along the path of the vehicle?

12 A I believe I did. Yes.

13 Q Are they the same speeds that you gave today when you
14 testified to the jury?

15 A Well, I believe so. I talked about ranges in a
16 little more detail in my deposition, but I came to the
17 conclusion and explained in my deposition that I believe
18 that the speeds were more consistent with the lower values
19 or the lower drag factor values.

20 Q Right. So that brings us to this range that you
21 talked about at the point at which the mark began on the
22 road. And the range you gave us was what?

23 A Well, I said it was approximately 50 miles per hour.

24 Q At your deposition did you give a range?

25 A I talked about a range I believe from 50 to 56 miles

1 per hour.

2 Q Then did you describe where within the range that
3 your number, the true number likely lay?

4 A I believe I did. Yes.

5 Q what did you say?

6 A I said it was closer to the lower part of the range.

7 Q You were asked, sir, if you had done any tests out
8 there at the crash site where you depleted the brake vacuum,
9 and you said you didn't. Why not?

10 A Well, and I also describe that I conducted tests
11 where I held the throttle open and pumped the brakes. But I
12 don't believe it depleted the brake booster.

13 Q why?

14 A Because the throttle wasn't open sufficiently to
15 deplete the booster.

16 Q what happened to the car when you pumped the brakes
17 those times?

18 A It stopped.

19 MR. JENNINGS: Those are my questions. Thank you.

20 THE COURT: Mr. Stopschinski, you can step down,
21 sir. Ladies and gentlemen, it is ten to three. We're in
22 recess for the next 15 minutes.

23 All rise while the jury exits.

24 (Whereupon, a short recess was had.)

25 THE COURT: We're back on the record. We're

1 outside the presence of the jury. It is my understanding
2 that we needed to make a record on something.

3 MR. CLARK: Your Honor, that's right. And the
4 record is on this question about 60,000 complaints of
5 unintended acceleration. And we've already discussed this
6 outside the presence of the jury once with Mr. Tawwater
7 asked the question of Ms. Brandt. And I think the
8 instruction from the court was that the plaintiffs were to
9 be careful about saying, quote, 60,000 instances of
10 unintended acceleration, because it is undisputed that
11 60,000 number includes complaints of transmission surge.

12 It is undisputed that the 2002 and 2003 Camrys had
13 some problems with transmission surge that were remedied by
14 way of a technical service bulletin. And Mr. Beasley asked
15 the exact same question that I thought the court advised the
16 plaintiffs not to ask anymore.

17 THE COURT: I don't remember him asking anything
18 about 60,000. He talked about the 700 percent.

19 MR. CLARK: The question before that, which drew an
20 objection rightly so, was related to the 60,000 complaints
21 of unintended acceleration. And we would ask the plaintiffs
22 not ask that question anymore without approaching. It
23 misstates the record and is really prejudicial.

24 THE COURT: I don't even remember him saying
25 anything.

1 MR. BAKER: My recollection was he used the 400
2 percent.

3 THE COURT: Counsel, if you're going to use the
4 60,000 figure, approach the bench before you use it. Okay.

5 MR. CLARK: Just a few housekeeping things with
6 exhibits. The court instructed the parties to make some
7 redactions on Exhibit 722. It has admitted the exhibit over
8 defendants' objections with those redactions. I think the
9 parties have made and agreed on those redactions.

10 THE COURT: Okay. I think I previously admitted it
11 with the redactions, so if you will put it down there with
12 the other exhibits.

13 MR. CLARK: This is 18.22, which the court admitted
14 this morning, and we just wanted to substitute a color
15 version, so I think that goes on the pile. And 698 I don't
16 think there is any objection; that is the last Santucci's
17 exhibit.

18 THE COURT: Was that a plaintiff's one that the
19 defendants wanted to put in but it was a plaintiffs'
20 exhibit?

21 MR. BAKER: Right. And I just wanted the record to
22 reflect we didn't put it, in they put it in.

23 MR. CLARK: And we just kept their number.

24 THE COURT: Should we mark it as Defendants' 698,
25 then? If it is a defendants' exhibit, I have to call it

1 defendants' something.

2 (Whereupon, an off-the-record discussion was had.)

3 MR. CLARK: 65.1, your Honor.

4 THE COURT: Okay. There was no objection.

5 MR. BAKER: None, your Honor.

6 THE COURT: Court will admit Defendants' Exhibit
7 No. 65.1.

8 (Whereupon, the jury returns to the courtroom.

9 THE COURT: We're back on the record. The members
10 of the jury are present as well as counsel and their
11 clients. Mr. Jennings, you call your next witness.

12 MR. JENNINGS: Thank you, ma'am. Defendants call
13 James Walker.

14 THE COURT: Raise your right hand, please.

15 (Witness sworn.)

16 JAMES WALKER, JR.,

17 called as a witness, after having been first duly sworn,
18 testified as follows:

19 DIRECT EXAMINATION

20 BY MR. JENNINGS:

21 Q Good afternoon. Tell the jury your name, please,
22 sir.

23 A James Edward Walker, Jr.

24 Q Mr. Walker, where are you from, sir?

25 A I currently live in Houston, Texas.

1 Q what do you do for a living in Houston?

2 A I'm an automotive engineer.

3 Q where do you work down there?

4 A I work for Carr, C-A-R-R, Engineering.

5 Q So you are no doubt acquainted with Karl Stopschinski
6 who has testified here today?

7 A We work in the same office.

8 Q Thank you. Before we talk in more detail about who
9 you are and what your background is, let's kind of establish
10 what the subject of discussion will be during your testimony
11 today, okay?

12 A That's fine.

13 Q Do you have opinions that you can share with us, Mr.
14 walker, concerning the brake system of the 2005 Camry which
15 is the subject of this case?

16 A I do.

17 Q Can you explain to us what the brake system consists
18 of, the various components that it includes and how they
19 work?

20 A I plan to do all of that. Yes.

21 Q Does that also include a discussion of marks that can
22 be caused -- tire marks that can be caused on a roadway by
23 engagement of a parking brake and also by applying the foot
24 brake?

25 A Yes, sir.

1 Q what else are you going to talk to us about?

2 A From a design standpoint, the 2005 Camry having a
3 brake system that is not defective that works in a
4 reasonable way and is able to stop the vehicle with
5 reasonable pedal efforts.

6 Q So to the extent that we may need to touch on it
7 during your testimony, can you address what has been
8 described as a brake throttle override?

9 A I do plan to discuss how that system works. Yes.

10 Q All right. And do you plan to talk to us to the
11 extent it becomes appropriate about any significance that
12 brake throttle override would have had with respect to Mrs.
13 Bookout's accident back in September of 2007?

14 A I do plan to apply principles of brake throttle
15 override system to the causes and conditions and
16 circumstances of this specific crash to see if that
17 technology could have influenced the crash one way or the
18 other.

19 Q Don't be mislead. I don't plan on a lengthy
20 discussion of that subject. But to the extent it becomes
21 relevant we will touch on it and move on.

22 A That's fine.

23 Q Let's introduce you in greater detail to the jury.
24 By the way, have you prepared some slide that we can show
25 the jury that will be useful in presenting your testimony

1 today?

2 A I have far fewer slides than Mr. Stopschinski did,
3 but, yes, I do have slides.

4 Q That's good news, but you do have some?

5 A Yes.

6 Q Do you have one that contains your resume so you can
7 acquaint yourself with the jury?

8 A I do have a one-page document. Yes.

9 Q Good. Let's look at it. We may want to bring up a
10 part or two of this. First of all, tell us, if you would,
11 please, sir, what you do at Carr Engineering, what your
12 educational background is. Just a sketch of yourself and
13 the things that qualify you to address the subjects that you
14 plan to address today.

15 A Sure. I'm currently an employee of Carr Engineering.
16 I've been there for nearly seven years now. Prior to that,
17 I worked in the auto industry in the Detroit area. I worked
18 for a variety of automotive manufacturers including General
19 Motors and Ford as well as their suppliers, such as Bosch
20 and TRW and Delphi.

21 My degree is from a school called General Motors
22 Institute. It was a work/study type of program where I
23 actually worked for GM for five years where I pursued my
24 bachelor of science in mechanical engineering degree in
25 parallel, wrote a thesis, and then graduated with a degree.

1 At Carr Engineering, my fundamental role is to
2 provide engineering consulting services. That takes on a
3 variety of different descriptions. In some cases, I'm doing
4 work like this here where I'm investigating traffic crashes.
5 If it requires so, I can give testimony about that.

6 But a large part of my work involves not litigation
7 based items where I'm working with manufacturers developing
8 products and analyzing future products. I work with the
9 government on several occasions trying to understand
10 potential new legislation coming along and interpreting that
11 for my clients. So I do a variety of different things that
12 are not just the crash reconstruction and the analysis of
13 accidents.

14 Q You mentioned that you're an engineer. You got a
15 degree in what kind of engineering, sir?

16 A It's called mechanical engineering with an automotive
17 specialty. So I took the traditional mechanical engineering
18 curriculum and then added on classes such as engine design,
19 chassis design, transmission design, suspension design, then
20 full vehicle dynamics analysis.

21 Q When did you get that degree and from what
22 institution?

23 A Again, it was General Motors Institute. At the time
24 it was called GMI. Today it is called Kettering University,
25 it has changed names, and I received that degree in 1994.

1 Q what does General Motors Institute mean? what is
2 that about?

3 A General Motors Institute was founded I believe around
4 1915 or 1920. At that time, it was a school that was set up
5 and sponsored by General Motors. It is a regular accredited
6 university, just like going to I guess University of Texas,
7 maybe that is a bad reference here with this jury, but it is
8 a regularly accredited school. You can get a master's
9 degree, you can get a bachelor's degree in a variety of
10 disciplines including electrical engineering, chemical
11 engineering, there is biomechanical engineering, chemistry,
12 things of this nature.

13 But all of the curriculum -- what differentiates
14 GMI from nearly every other school is you coop for the
15 entire five years was a sponsor company. So you work for
16 six months and you go to school for six months from day one
17 of your education and you are required to write a thesis at
18 the end.

19 Q You mentioned that you worked for a while for a few
20 companies like TRW and Bosch and Delphi and Ford. Ford, of
21 course, we know about. But these other companies, what do
22 they do?

23 A Sure. TRW, which was called Kelsey-Hayes at the
24 time, Delphi, which is the AC/Delco, if you heard that name,
25 and Bosch, they are suppliers of components and systems that

1 get sold to the auto companies. For example, Toyota doesn't
2 manufacture the brake calipers or the brake rotors in the
3 brake system. They buy those parts. They may buy them from
4 a Bosch or a Delphi or some other supplier.

5 So Delphi and Bosch, based upon how the economics
6 of the world economy are doing, are usually regarded as the
7 number one and number two largest suppliers of automotive
8 components worldwide. TRW is still a very, very large
9 supplier of such components, but they are just not in the
10 top two.

11 Q Do you have particular experience in the design and
12 development and testing of braking systems and electronic
13 control systems?

14 A Throughout all five of my positions, those five
15 different companies, even though I moved between companies I
16 stayed in the same field, so I have always worked in brakes,
17 brake controls, which includes antilock brakes, electronic
18 stability control, anything that you can attach a computer
19 to the brake system and make the car do something different.
20 So I do work in both the base brake or service brake system
21 as well as the electronics that we can add to it to make the
22 car do different things.

23 Q So it is clear, I think by this time to everyone that
24 what we're interested in in this case largely is brakes,
25 vehicle dynamics, the way vehicles roll down the road and

1 what they do. Are those two areas within your field of
2 specialty?

3 A Certainly. And I can expand that a little bit. When
4 I talk about vehicle dynamics, the simple way to think about
5 vehicle dynamics is whatever makes a car go, stop or turn;
6 that is vehicle dynamics, what makes a car go, stop or turn.
7 Throughout my entire industry experience, my educational
8 background, and, frankly, my hobbies as auto racing, I have
9 become, I believe, an expert in the areas of what makes a
10 car go, stop and turn.

11 Q You mentioned that you're an employee of Carr
12 Engineering. Now, I want to ask this question carefully and
13 not in an inappropriate way. But generally speaking, as an
14 employee of Carr Engineering, how are you paid?

15 A The way I'm paid, and you have to ask the accounting
16 department specifically the nits and bits, but it is a
17 salary plus bonus type of structure which is implemented by
18 the owner of the company, Mr. Lee Carr.

19 Q Okay. I'm looking at your CV here, your curriculum
20 vitae, and a couple of things come to my attention. Right
21 at the very top under your name it says registered
22 professional engineer in the state of Texas. Is that what
23 you are, sir?

24 A That is what I am. Yes.

25 Q Were you here when Mr. Stopschinski was testifying

1 about being a registered professional engineer himself?

2 A I was.

3 Q And all that he went through to become a registered
4 professional engineer, did you also do those kinds of
5 things?

6 A Exact same process. Yes.

7 Q Then if we go to the third bullet point under
8 specialized professional competencies, what does that say?
9 Specification design testing and evaluation of conventional
10 motor vehicle steering, handling and braking, including
11 dynamic stability assessment. Is that what we're going to
12 be talking about today?

13 A That, in plain English, is what makes a car go, stop
14 or turn. Yes.

15 Q Couple of other quick items. If we drop down to the
16 section called publications, let's see. We see there at the
17 first bullet point, what, Mr. Walker?

18 A I have been retained by the Society of Automotive
19 Engineers, or SAE, as you probably heard about them earlier
20 in the trial, to be a lecturer or a teacher for five
21 different professional development seminars or classes that
22 I have developed and I offer on a regular basis through SAE.

23 Q Have you been awarded a particular status within the
24 SAE as a teacher?

25 A There are a variety of different levels and statuses,

1 I suppose. About three years ago, the SAE created a master
2 instructor designation for those instructors. And I forget
3 the language, but those that do significantly more than just
4 teach classes, they mentor others and things of this nature.
5 And I was actually awarded the very first master instructor
6 through SAE in 2010.

7 Q So in addition to all of these things that you
8 described, have you also authored a book?

9 A I have indeed authored a book.

10 Q What is it called and what is it about?

11 A The book is called *High Performance Brake Systems*.
12 And it focuses on the design, selection, application and
13 installation of things such as master cylinders, rotors,
14 brake pads, and why you would chose a certain braking system
15 design for this vehicle but a different brake system design
16 for this vehicle over here. And it looks essentially at the
17 compromises and tradeoffs. Because any mechanical isn't
18 going to be a perfect system, it is going to be a
19 combination of components that always have some inherent
20 compromise. And how do we best manage thos compromises is
21 real the focus of the book.

22 Q There has been at least a brief reference to the fact
23 that the SAE publishes papers, peer-reviewed papers. Have
24 you written some of those?

25 A I have actually not participated in writing papers,

1 but I have been a reviewer on a review board for SAE. I
2 have chaired sessions at the annual conference where all of
3 SAE comes together in Detroit once a year in the spring and
4 we break out into sessions and have people give
5 presentations. I have been a chair of those sessions as
6 well as a technical reviewer of those types of papers.

7 My SAE publications are not in the paper form, they
8 are through my instructing. I have thousands of pages of
9 publication through SAE that have to do with my seminars
10 that I teach. So I publish in a different venue than a
11 traditional SAE paper.

12 Q So when it comes to being peer reviewed, you are one
13 of the people who peer reviews; is that right?

14 A I am a reviewer as a peer; yes, that is true.

15 Q You mentioned also that you have some involvement in
16 auto racing. Tell us a little bit about that.

17 A Sure. I've been actively involved in one form of
18 automotive sports or another since about 1992, so about 22
19 or 21 years' worth. And I used to build and race my own
20 race cars. I no longer have time for that. I have a family
21 now. So I race other people, friend's race cars on
22 occasion. But through it all, it involves the design, the
23 analysis and then the actual testing and evaluation of the
24 vehicles in a racing type of environment.

25 It has allowed me to develop skills that translate

1 very well into my day job where I can analyse vehicles by
2 giving the vehicle a very specific set of inputs in a very
3 repeatable fashion to see how the car responds.

4 Q That's what I was going to ask you. Does that
5 experience actually contribute to your ability to do an
6 analysis of the type you have done in this case?

7 A It is extremely complimentary. If you want to run a
8 test like Mr. Stopschinski talked to you about, you have to
9 do things in a predetermined scientific way in a repeatable
10 way so you can measure the results and come to intelligent
11 conclusions about those results. So the better of a driver
12 you are, and not so much from a skill standpoint, but can I
13 do the same thing over and over again to see how the car
14 responds to compare this test to that test.

15 It is invaluable to be able to do those types of
16 things behind the wheels and with the pedals. As you saw,
17 it is kind of complicated to do this with the steering and
18 this with gas and this with the brake all at the same time
19 while I am triggering the data acquisition system to do its
20 thing. So it is a disciplined approach, and my auto racing
21 has helped.

22 Q Do you charge by the hour for your professional
23 engineering work?

24 A Carr Engineering does charge by the hour for my
25 services.

1 Q How much?

2 A I'm at \$445 per hour.

3 Q All right. Let's get to the case and talk about the
4 opinions that you have done in this case. First, has the
5 work that you've done in this case and you're going to tell
6 us about in a few minutes, equip you to come here today and
7 talk to this jury and give them some opinions relevant to
8 this case to a reasonable degree of engineering certainty or
9 probability?

10 A Yes.

11 Q All right. Let's begin, then, with the overview of
12 your opinions. And tell us what that would be, if you
13 would, please, sir?

14 A Sure. Essentially I have three core opinions. The
15 first core opinion we already talked about briefly. That is
16 that the design of the 2005 Camry and specifically its brake
17 system is not defective. It's a common place mainstream
18 design. It has good ap, operating features, it is reliable,
19 it is durable. We've tested it, the performance is good.

20 The second opinion that I have regards this brake
21 throttle override technology that has been mentioned
22 briefly, I believe, in this trial. Specifically, I've
23 analyzed how the system works. And my opinion is that you
24 don't have to have this system on a car for it to not be
25 defective. You don't need it to be safe, the 2005 Camry is

1 safe without this brake override system technology.

2 The third opinion that I have is I've actually
3 analyzed the specific crash scenario. I certainly relied
4 upon the reconstruction work done for the details of those,
5 but I'm analyzing exactly what happened, what the evidence
6 tells us. I've come to the conclusion and the opinion even
7 if this vehicle had brake override, even if it was equipped
8 with that it wouldn't have mattered. Because in this
9 particular crash, the causes and conditions and
10 circumstances of this scenario aren't conditions that would
11 even trigger the brake override in the first place. It did,
12 it would be too late when the car is already in the ditch,
13 so it wouldn't have made a difference one way or the other.

14 Q Let's talk about the brakes of this 2005 Camry. Is
15 the brake system on this car typical for cars of that
16 vintage, 2005?

17 A It's extremely typical. Yes. I would say an
18 overwhelming majority of vehicles on the road that year had
19 a system that was functionally and mechanically very similar
20 to our vehicle, this 2005 Camry.

21 Q I want to delve into some detail into the brake
22 system, what it consists of, how it works. We all know a
23 little bit about it, we know if you step on the brake the
24 car slows and stops, but we need to know more. So in order
25 to get into what is the meat of your work, I need for you to

1 tell us the kind of work that you did to arrive at the
2 opinions that you have in this case today, okay, the
3 homework that you did before you got here?

4 A Sure. So try to remember them all. The first was I
5 performed a physical inspection of the crash-involved
6 vehicle, went there, put my own two eyes on it. I sent an
7 assistant of mine to a second inspection to do a more
8 detailed measurement of many of the parts of that vehicle.
9 I analyzed all the materials in this case, you heard about
10 the depositions and the reports and things of that nature.
11 I studied and analyzed the actual brake system of the 2005
12 Camry, I've compared it to peers.

13 I performed a large number of tests on the 2005
14 Camry, some specific to this case others for other matters.
15 But I've been testing these vehicles for a while, so I
16 understand exactly how they perform. I know what their
17 capacities are. I did studied documents produced by Toyota
18 indicating their certification and compliance to various
19 standards, including the government braking standard called
20 the 135 standard which dictates the cars must meet that
21 level of performance to even be sold in the United States.
22 I combined that with my real-world experience and my
23 knowledge of the brake systems, and that allows me to come
24 to these conclusions and opinions.

25 Q I want you to talk to the jury about the components

1 of the brake system for the 2005 Camry. What would be the
2 best way to present that?

3 A Probably if I can write on a flip chart and make draw
4 a quick schematic. It might make the most sense.

5 Q I happen to have one.

6 MR. JENNINGS: Judge, can he step down?

7 THE COURT: Yes.

8 Q (By Mr. Jennings) First tell us what you're going to
9 do, then do it.

10 A Sure. You all know from driving your own car, and
11 the test of Mr. Stopschinski told us that when you press the
12 brake pedal the car stops. There is a lot that happens
13 between the time that you press the pedal and the car stops.
14 In order to share some of my opinions with you and have them
15 make sense to you, I will show you what some of those
16 components are. It is sort of like the hipbone is connected
17 to the knee bone and the ankle bone. I will do that sort
18 analysis for you of the brake system so you can understand
19 why when you press on the brake pedal the car stops. And I
20 can do that by drawing a simple chart up here if it's okay.

21 Q Perfect. Go ahead.

22 A The braking system starts from a component standpoint
23 with you, the driver. You have to apply a force to the
24 brake pedal for the brakes to do something. We can't forget
25 about that. Now, Toyota doesn't design that, you bring that

1 to the table. The first mechanical part on the vehicle is
2 the brake pedal. I will draw a brake pedal here, and I will
3 try to draw a foot. And there is a foot.

4 So you apply a force with your foot to the brake
5 pedal. That sets off the chain of events that will
6 eventually stop your car. The pedal is actually a long
7 lever. And that long lever amplifies the force that you
8 apply. It is like a seesaw. The farther up the seesaw, the
9 heavier the kid, you can lift on the other end. So the
10 longer the brake pedal and the longer the distance there the
11 more leverage, or the more gain, as we call it as engineers,
12 the more gain that it provides.

13 The brake pedal that sends that force off to what
14 is called a booster, and you heard some talk about this, the
15 booster is a pneumatic, or an air-powered device which
16 further increased the force that the brake pedal increased.
17 The next component, then, is mechanically bolted to the
18 booster. This is called the master cylinder. That converts
19 that force, that pushing force into fluid pressure. It is
20 where your brake fluid is.

21 So the brake fluid is in this reservoir. You push
22 on the fluid and the reservoir, and that pressurizes it.
23 And that allows that force then to go out to the four
24 corners of the car. So we have usually four different brake
25 lines. We have four separate hydraulic lines that take that

1 pressurized fluid and distribute it to the brakes as you
2 call the brakes the calipers and rotors and things like this
3 out inside the wheels; that's how the force gets there
4 through this pressurized fluid.

5 So everywhere you see red there this is pressurized
6 fluid going out in the brake system. Now, on a 2005 Camry,
7 there are two types of brakes. The brakes on the front-end
8 of the vehicle, we call those disc brakes. There is a big
9 steel disc about 10 or 11 inches in diameter. There is a
10 big clamping mechanism called the caliper. As the big disc
11 is a spinning around, this clamping mechanism, the caliper,
12 squeezes on it. It is sort of like you putting your finger
13 on a record on a record player, it will slow down as you
14 squeeze on it.

15 So we have the caliper device, that I will draw in
16 pink. I will call this the left front brake, and call this
17 the right front brake. As we squeeze with these calipers on
18 those brakes the tires slow down. When the tires slows down
19 the car can slow down. That is a disc brake, we are
20 squeezing on this rotating disc. The rear of the Camry has
21 a design called a drum brake. The drum brake functionally
22 is simple, but now we have a spinning disc and we are
23 pushing outward against the inside of a spinning drum.

24 So we have shoes, we call them brake shoes, in the
25 back that get pushed outward against the spinning drum which

1 also serves to slow it down. So we will call this the left
2 rear and call this the right. Plus, let's call this the
3 right rear and call this the left rear. That will better
4 represent. You can see that there are two different
5 hydraulics where the left front and the right rear brake are
6 on the one common hydraulic circuit, and the right front and
7 left rear on another hydraulic circuit. This is in case one
8 of these lines breaks the other side still works.

9 There is redundancy here, so there is failsafes
10 built in mechanically. There is a variety of other things
11 where there are failsafes built into the system, but
12 mechanically this is a very high level. You push on the
13 pedal, the pedal amplifies the force, the booster amplifies
14 the force again. The master cylinder pressurizes the fluid
15 which gets transmitted out to the tubes, to the four
16 corners. You have front disc brakes squeezing, you have
17 rear drum brakes pressing. All of that serves to slow the
18 car down.

19 On top of all of this, there is a parking brake
20 system. The parking brake system doesn't use any of the
21 hydraulic stuff. It is either a foot-type of pedal that you
22 push or a hand brake. The 2005 Camry is a hand-activated
23 lever. You probably used a hand brake in a car before.
24 what you're doing is when you pull up on the lever, I will
25 draw it over here, as you grab the lever and pull it up,

1 you're pulling a bunch of cables that go to the two rear
2 brakes, and those cables make the drums stop.

3 Those cables provide the force the hydraulic system
4 normally provides. So your parking brake system is an
5 auxiliary system on top of the regular braking system which
6 is all mechanical, there is no brake fluid in it. Again, it
7 works just on the rear brakes to apply a force to those rear
8 brakes to keep the vehicle from moving.

9 Q We will talk about that more in just a little bit.
10 First, before you leave your drawing, talk to us a little
11 bit about ABS brakes and this other thing, is it EBD?

12 A Sure. I will talk about both of those.

13 Q What are they, and what do they do?

14 A Sure. ABS and EBD are what I call brake control
15 systems; they are part of this SAE class that I teach. I
16 have two whole modules just on how these technologies work.
17 They're add-ons to what you see here. So this really
18 doesn't change when you add ABS and EBD. The ABS and EBD,
19 they would be in a box or a module which goes between the
20 master cylinder and the wheel brakes.

21 And the ABS, EBD thing can control the brake
22 pressure going to each wheel, control the amount of pressure
23 in these red lines separately at each wheel. You as the
24 driver can't do that, but this special actuator, the ABS and
25 EBD can do that. If there are circumstances where there are

1 four sensors that measure what is going on at the wheels, it
2 is plugged into the ABS. If the ABS thinks the wheels are
3 locking up or about to slide, it can momentarily release the
4 brake on just that one wheel just for a nanosecond just long
5 enough for it to keep from locking up.

6 The EBD, which is a electronic brake force
7 distribution, is a term you may not have heard before, is
8 sort of like pre-ABS only for the rear brakes. Before this
9 ABS, EBD came along, we used to have a device that went to
10 the rear brakes. I will put a big capital P here. This
11 capital P device was a proportioning valve. The
12 proportioning valve keeps the rear brakes from locking up
13 before the fronts.

14 If your rear brakes lock up, the car spins out of
15 control. So to keep that from happening, back before we had
16 all these electronic things we put these mechanical
17 proportioning valves in line to keep the rear brakes from
18 locking up. The EBD has replaced that. We do that
19 electronically now with all the ABS stuff. But the function
20 of EBD is to replicate what the proportioning valve does.
21 So the function to you as the driver is identical.

22 The EBD does it a little more efficiently, it is a
23 little more elegant because it is not all part of the ABS
24 you can package it all together and you can get rid of these
25 little mechanical valves. But functionally, the EBD keeps

1 the rear tires from locking before you get into ABS.

2 Q why is that a good thing? why do you want to avoid
3 locking those tires?

4 A Any time a tire is locked and sliding, it can't
5 sustain we call lateral force. It can't turn. So if a
6 front tire of your car locks up and you turn the steering
7 wheel, the car just goes straight because the tire can't
8 make the car turn. If you have ever driven on ice and snow
9 in a car without ABS, you look up your tires and turn the
10 wheel, it doesn't matter where the wheels are turned, the
11 car goes straight.

12 Now, if the back tires lock up it is a whole
13 different scenario. The way the physics work, and without
14 going into too much math, if the back tires lock up, your
15 car will spinout. There is a lot of math that goes along
16 behind that. But if a rear tire locks, you lose what is
17 called stability. So if the rear tires lock up, you go
18 spinning out of control. That is just no good either.

19 So the prop valve is there mechanically to keep the
20 rear brake from locking up. ABS can keep any of the brakes
21 from locking up, which gives you both enhanced steering
22 control as well as increased stability.

23 Q We will get to it in a few minutes, but just let me
24 drop a quick footnote here. Just because you have ABS and
25 EBD does that mean when you get in a panic situation and

1 apply your brakes heavily you're not going to leave any
2 marks on the road?

3 A It doesn't mean that at all, even with these
4 technologies you can leave tire marks all day long on
5 certain surfaces at certain speeds during certain maneuvers.
6 It doesn't preclude you from having tire marks.

7 Q Is that pretty well known in the automotive
8 engineering world out there?

9 A I have been in the industry for over 20 years now,
10 and I've known it since I have been there. People I work
11 there have known it. There are SAE papers about it. Ever
12 tested a car with ABS you would know it. I've seen it
13 firsthand, I have done it for 15 years in my career. It is
14 pretty well-known.

15 Q And you have done some testing for this case, haven't
16 you?

17 A I have done some testing specifically for this case
18 with a 2005 Camry demonstrating this exact concept, and we
19 will talk about that later.

20 Q Before you sit down, let me ask you about your
21 diagram of the parking brake. Flip that chart and sketch
22 that one more time and tell us how the parking brake is laid
23 out and what the -- where the cables go, and what wheels
24 they act on.

25 A Sure. So a little more parking brake detail. Let's

1 assume it is a 2005 Camry. So it is a hand-activated
2 parking brake which is right near the shifting mechanism in
3 the center console of the car. So you have a handle which
4 is probably shaped something like this here, which is where
5 you put your fingers and pull up on the handle. So you pull
6 the parking brake up.

7 What you don't see underneath the cover is there is
8 a cable that runs from that parking brake under the floor of
9 the car. Once that cable gets under the floor of the car,
10 it gets split into two more cables. There is a little yolk
11 there or a splitter device. That little splitter device
12 then has two cables; one that goes to the left rear brake
13 and one that goes to the right rear brake.

14 When you pull the one cable the force gets split
15 between the two. Those two cables pull the two rear drum
16 brakes in such a way that the brake shoes inside those drums
17 get pushed out against the drum and locks it up, effectively
18 keeping it from spinning as your moving on, or if you are
19 already parked, it keeps the car from rolling away.

20 Q You touched on this a minute ago, but let me ask you
21 a little more about this. What significance does locking
22 those rear tires have with vehicle stability if the vehicle
23 is in motion when you do it?

24 A Sure. If you were to pull up the parking brake to
25 lock up the rear tires while the vehicle is moving, the car

1 spins out. You need just a very, very, very small
2 disturbance in the road or a cross wind or a little bit of
3 turning of the steering wheel, just small little
4 disturbances. Even on a flat, smooth dry road, you pull up
5 the parking brake the car will spinout. That is the physics
6 of stability.

7 A rear brake that is locked up can't support any
8 side force, a little bit of road crown, maybe some truck
9 ruts in the road that you are on, maybe you are going
10 through a slight bend in the road. Any of those little
11 disturbances that seems like small things to you as a
12 driver, those are more than enough for the car to swap ends
13 and spin right around if the rear brakes are locked up.

14 Q Take this little car model that we have got, and show
15 me what you are talking about when you say spinout or swap
16 ends.

17 A Sure. So I will go here to the table if I can. If
18 you are driving along in a vehicle and there is a slight
19 crown in the road, or there is a slight bend to the right,
20 so you have a little bit steering to do for the car to go to
21 the right. If the front tires lock up, the car will no
22 longer go to the right, it will simply slide straight ahead.

23 But if you are doing that same maneuver and you
24 pull the parking brake, the car does this. The car wants to
25 come around. It does a full 180, so it is pointed the

1 opposite direction it was going. And it happens like that,
2 it happens in a matter of a second or less sometimes,
3 depending on how fast you go and how much steering that you
4 have. But it is a very quick, very immediate reaction where
5 the car spins out and is facing the wrong way, essentially.

6 Q Okay. Mr. Walker, you said a minute or two ago that
7 this brake system of the 2005 Camry was very common for its
8 vintage, 2005. Can you put that in perspective for us? How
9 common is common for a vehicle like this?

10 A Sure. So I actually did a study of specifically
11 vehicles equipped with this type of vacuum-assist
12 vacuum-actuated brake system. I did a peer analysis looking
13 at all of the passenger cars, about eight million passenger
14 cars that were sold in the states in 2005. And through my
15 study, I found that over 90 percent of vehicles had this
16 type of vacuum-assisted or boosted-type of brake system.

17 Q Have you got a slide that will show this?

18 A I believe I do.

19 Q Let's put it up. First of all, before you compare
20 the numbers on this chart, tell us what you mean by vacuum
21 boost. What is that? What are you talking about?

22 A Sure. If you recall from the diagram that I just
23 drew for you, you press on the brake pedal, and the brake
24 pedal increases the amount of force through that lever. And
25 the master cylinder turns that force into hydraulic

1 pressure. In between there is a device called a booster.
2 That booster relies upon engine vacuum or pneumatic pressure
3 to also increase the boost.

4 How it does that is very, very complex, but it is
5 also extremely common. These are widespread. You can see
6 from my chart here that in 2005 over 95 percent of vehicles
7 used some sort of -- form of vacuum booster. I am talking
8 about passenger cars, production cars akin to the 2005
9 Camry.

10 Q All right. So you evaluated the specific braking
11 system that is found in the 2005 Camry, right?

12 A I have. Yes.

13 Q All right. What is your opinion with respect to how
14 it performs?

15 A It performs in a way that is remarkably similar to
16 peers and competitors. It satisfies all internal standards,
17 that being Toyota's standards satisfies all government
18 requirements. I reviewed the paperwork that Toyota submits
19 to the government for certification. I believe, if memory
20 serves me, that the smallest pass margin was almost 20
21 percent, which means that the very lowest performing of all
22 the tests still met the standards by more than I think a 18
23 or 20 percent margin.

24 Whenever you have a margin in your design, that
25 means it is above and beyond. It is like saying I can lift

1 30 pounds but I only have to lift 15. This car's brake
2 system satisfies all the requirements by a significant
3 margin. And I think the smallest of those margins, the
4 government standard was about 18 percent, if I recall
5 correctly.

6 Q Were you in the courtroom when Mr. Stopschinski was
7 describing the testing that he did out at the crash site
8 with this vehicle?

9 A I was.

10 Q What did that tell you with respect to the brake
11 performance and the brake capacity of the 2005 Camry?

12 A The testing that he performed is similar to testing
13 that I have performed on the similar vintage vehicle, and
14 that is that the vehicle performance is exceptional.
15 It has great stopping distance, it has more than enough
16 brake force to stop even at deceleration levels well above
17 typical around-town driving.

18 You might not have heard this, but when you just
19 drive around, we can measure how hard you stop or how
20 quickly you stop in what is called Gs. You have heard of
21 fighter pilots going through a 7-G turn and roller coasters
22 are 3Gs. When you drive around town and when you apply the
23 brakes, you brake at about .2Gs; that is the level people
24 typically drive around town at, about .2 or 2/10ths.

25 The Camry can do almost 8/10ths or 9/10ths of a G

1 if you really hit the pedal, so it will stop three to four
2 times harder or faster than required for typical driving.
3 That again shows a margin of safety in the design. So the
4 results that Mr. Stopschinski brought forward shows that it
5 was has very high capacities, it can achieve very high
6 levels of deceleration. In fact, his testing also showed
7 additionally it does that even if you're intentionally
8 holding the throttle down or holding the gas pedal down
9 trying to make the car go. It has more than enough brake to
10 slow it and to overcome the engine torque.

11 Q I know you mentioned that you have done some testing
12 is similar to what Mr. Stopschinski has done. And some of
13 it you will talk to us about today. But generally speaking,
14 how does that stand up against what Mr. Stopschinski has
15 done?

16 A It's perfectly complimentary. We did three different
17 test programs between the two of us. He did the test
18 program at the scene. We shared one at the facility in
19 Houston, and then I coordinated a third one in Houston. And
20 in the complimentary fashion, the results of all the testing
21 shows these very high capacities with more than enough
22 braking to overcome even the engine torque, even if you
23 intentionally command throttle.

24 Q Have you seen any testing that has been done by Mr.
25 McCort, any kind of testing done by Mr. McCort who did the

1 reconstruction for the plaintiffs in this case?

2 A I'm aware he did some computer-type work. But I'm
3 unaware that he did anything with an actual real car.

4 Q How about Mr. Hannemann, the expert they called on
5 brakes? Are you aware of work that he did in this case?

6 A My understanding is that Mr. Hannemann has done some
7 evaluation of a not identical vehicle to our crash-involved
8 vehicle, but a 2005 Camry with a different power train. I
9 believe some of that was instrumented, but the large
10 majority that he talks about was not instrumented. That is
11 my understanding of that testing.

12 Q How did it compare, or in terms of results to what
13 you have done?

14 A Mr. Hannemann's testing shows that when you apply the
15 brake the car stops. So in that sense, it replicates much
16 of the work that we have done. He did a number of different
17 types of test, but without exception when he applies the
18 brake and holds the brake the car slows down even when he is
19 applying engine power.

20 Q Now, you are the brake expert, we know that Mr.
21 Stopschinski is the reconstruction expert at least in this
22 case, and he showed us the testing that he did where the
23 throttle was open and the brake was applied and the vehicle
24 stopped on the ramp. Is that a reasonable expectation for
25 the performance of this subject vehicle, and would that have

1 been a reasonable expectation on the day of Mrs. Bookout's
2 accident?

3 A It is absolutely a reasonable expectation. It is
4 consistent with the design of the vehicle, it is consistent
5 with the testing that we reviewed and the testing that we
6 performed. It is a good solid design that stops when you
7 hit the brake.

8 Q I want to talk to you a little bit, Mr. Walker, about
9 some of the case-specific work that you did in this case.
10 After all, we're concerned with this vehicle and this
11 accident above everything else, so that's what I want to
12 talk to you about, okay?

13 A Okay.

14 Q Did you see the vehicle?

15 A I did see the vehicle.

16 Q How many times?

17 A I laid eyes on it personally once, and then I sent my
18 assistant Nicholas Cheek a second time to do more detailed
19 measurements that we weren't allowed to do the first time.

20 Q What did that effort produce?

21 A There are two things. We talked that I have the
22 opinion that the 2005 Camry design is not defective, but we
23 also had to make sure there was nothing unique about Ms.
24 Bookout's specific vehicle that would have kept it from
25 performing like the design indicates that it would perform

1 like.

2 For example, was there an out-of-maintenance item,
3 were the brake pads worn out, was there a brake fluid leak,
4 was it out of brake fluid, was there any other problem with
5 the car. So we were looking specifically were there any
6 problems with any of those parts that I drew on the board
7 for you that would not allow her car to decelerate if the
8 brake pedal was applied.

9 Q All right. Did you take pictures when you were there
10 at the vehicle?

11 A We did photographs and measurements. Yes.

12 Q Let's look at some. Do you have some pictures that
13 we can look at that will -- well, wait a minute. Back up.
14 Before I do this, I realized now that I overlooked
15 something. I wanted to ask you what these yellow tubes on
16 this thing mean. What does that mean?

17 A Sure. What I was doing was trying to determine of
18 the eight million vehicles built in 2005 for the U.S. market
19 how many of them had a vacuum-assist system that was similar
20 to the 2005 Camry, was it a unique or unusual design. The
21 2005 Camry has a design that I entitled here as vacuum
22 without auxiliary pump; it is the far left column there.
23 You can see that the Camry is in that column along with over
24 90 percent of the other vehicles built that year.

25 The other smaller columns, the next two down are

1 vacuum with electrical pump and vacuum with mechanical pump;
2 those are variation of the Camry design which have auxiliary
3 power source for the vacuum, not just using the engine. So
4 they are similar to the Camry, but they have another
5 component installed. You can see they account for about
6 three to four percent of that yearly volume.

7 The final column to the right is the hydraulic.
8 There are some vehicles, specifically hybrid-type vehicles
9 like the Toyota Prius, let's say, where they don't have a
10 vacuum source, they use a hydraulic pump. It is called a
11 hydraulic boost on a pickup truck, where you don't use a
12 vacuum source but a hydraulic source. And those account for
13 about two to three percent of the U.S. market passenger cars
14 built that year.

15 So the summary is that looking at the Camry design,
16 the 2005 vacuum-assisted brake system, it is extremely
17 common. It is out there with over 90 percent of vehicles or
18 passenger cars built in 2005.

19 Q Let's take a look at a few pictures from your vehicle
20 inspection, maybe that will guide us in a discussion on the
21 important parts of the vehicle for your purposes, okay?

22 A Sure.

23 Q First, what are we looking at?

24 A So this is a very close-up picture of some of the
25 brake system stuff that happens up underneath the dashboard

1 of your car. This is where the top of brake pedal attaches
2 to the vacuum booster. If I use the laser pointer here,
3 this little black part here, that is the beginning of your
4 vacuum booster, and this is the top of your brake pedal.
5 You can see all the pins and locating devices and return
6 springs and everything are there and intact and functional.

7 As Mr. Stopschinski told you, there is mechanical
8 damage to the underside of the car which has sort of crushed
9 the car so you can't actually push the brake pedal because
10 it is mechanically bound in place due to the crash. But
11 every component, every feature, every return spring and
12 bracket, that is all there and in place and functional, and
13 would have been there at the time of the crash.

14 Q Anything at all to suggest that it didn't work or
15 wouldn't work?

16 A Nothing is wrong with this at all except for the fact
17 that it got into a crash.

18 Q Where is the part you put your foot on?

19 A That would be down in the floor down here. This is
20 the top of the brake pedal arm right here, and the brake
21 pedal arm goes down, down, down, down, down. The brake
22 pedal itself would be much further down. So you are pushing
23 on the other end of this component which you see up here.
24 This is the very top of the arm that holds your brake pedal
25 in place.

1 Q when you said earlier that the knee bone is connected
2 to the shinbone and on and on, are these those bones?

3 A That is it. Here is the brake pedal connected to the
4 booster. It is this little clevice-type (phonetic) bracket
5 right here. All of those are in tact and in place and
6 functional.

7 Q what is next?

8 A So if you recall then the booster further amplifies
9 the force that the brake pedal amplified. The master
10 cylinder converts that into pressurized hydraulic fluid.
11 what you are looking at here is when you pop the hood of
12 your car you can look down and see the master cylinder.
13 This is the top of the master cylinder. This is the
14 reservoir specifically where the brake fluid is stored.
15 This car had plenty of brake fluid. It was in there and it
16 looked just fine.

17 So the master cylinder had hydraulic integrity,
18 there were no leaks, no cracks, all the little hydraulic
19 fittings were in place, and there was plenty of fluid in the
20 system which, again, indicates that this part of the brake
21 system would have operated just fine prior to the crash.

22 Q Is that the principal purpose of your work here, your
23 inspection of these components to see if they are intact and
24 to see if they would work?

25 A Yes. I wanted to see if there was anything specific

1 or unique. Say, for example, one of the fittings comes
2 loose on Mrs. Bookout's vehicle; that could cause a loss of
3 braking. I wanted to determine if anything like that was on
4 this vehicle, and I didn't find anything. We're going
5 through this sort of progressively, but the master cylinder,
6 we look at hydraulic issues, mechanical issues, fitness
7 issues, all of those were fine. Clean bill of health.

8 Q Did you look at the front rotors of this vehicle?

9 A That's probably the next slide.

10 Q It is. Let's bring it up.

11 A So this is the front rotor, it is about an 11-inch
12 disc of metal. You can see it looks awful rusted and
13 corroded. This is made of a material called cast iron. And
14 if you have ever seen a cast iron part that is not painted
15 and left outside, it rusts really fast. This car hadn't
16 been driven in about four years by the time I got to see it
17 since the time of the crash, maybe even longer.

18 So what you see there is a layer of rust just
19 because the car has been sitting out and it is cast iron.
20 It is going to rust, and that's normal. But the parts were
21 physically there. The rotors were intact. We actually
22 pulled out the brake pads. We measured them, they had
23 plenty of thickness. The caliper was in place, all the
24 hydraulic fittings were there. The seals weren't leaking.
25 we did a full disassembly of all those components, and every

1 one check out just fine.

2 Q what is next on the list? Brake pads?

3 A It might be the brake pad. Here is a close-up. We
4 actually pulled each brake pad out and measured it
5 individually. If you recall, this vehicle had just under
6 10,000 miles, I believe, at the time of the crash, so you
7 wouldn't expect to see a lot of wear and tear on the brake
8 system in the first 10,000 miles, and true to form this is
9 the edge of the brake pad. It is zoomed in here, to be
10 sure, but the brake pad looks uniform in wear, there is no
11 signs of heat damage. It is like a virtually new brake pad,
12 and all of them looked approximately the same.

13 Q You know from your investigation in this case how old
14 this vehicle was, how much use it had had up to the time of
15 this crash, don't you?

16 A Correct. Yes.

17 Q What is your understanding of that?

18 A Maybe two years old, little less than two years old,
19 and about 9,600 miles at the time of the crash.

20 Q Is what you saw with respect to those components in
21 your inspection consistent with that kind of age and that
22 kind of use?

23 A Perfectly consistent. Yes. The parts were in very,
24 very good shape, as you would expect for a low-mileage
25 relatively new car at the time of the crash.

1 Q Okay. So we have brake pads somewhere and we have
2 brake shoes somewhere else, right?

3 A That's correct. The brake pads are on the front
4 brakes for the disc brakes; the rear shoes are on the rear
5 drums.

6 Q Let's look at those.

7 A Here is a close-up of the brake shoe. From this
8 angle, maybe it is a little hard to tell, but this surface
9 right here is the part of the brake shoe that gets pushed
10 outward toward you as you are sitting there in the picture
11 against the drum, which has been removed at this point for
12 the photograph.

13 So the big steel drum slides over the shoe, doesn't
14 normally touch it. When you hit the brakes, that shoe comes
15 towards you which then contacts the drum. You can see there
16 is plenty of friction material on it. There is plenty of
17 thickness, there is no signs of damage, no signs of heat,
18 just normal wear and tear that is consistent with a vehicle
19 that is about two years old. And all of them looked about
20 the same.

21 Q You mentioned that this vehicle has ABS brakes. Did
22 you look at that part of the braking system in your
23 inspection?

24 A Yes. Yes, I did.

25 Q What is that called, or what is the component called

1 that is of interest here?

2 A Sure. The term of art is that it is a modulator. but
3 it is the ABS component, the ABS thing. It looks like a an
4 aluminum block with a computer stuck on one end. So there
5 is this aluminum block here that is what controls the fluid
6 pressure going to the four wheels. The black part here,
7 that is the computer, that is the brains of the operation.
8 That controls the valves and the block that controls the
9 pressure going to the wheels.

10 And there are six different hydraulic lines; one,
11 two, three, four, five, six. Two hydraulic lines coming in
12 from the master cylinder, four lines going out to the four
13 wheels. That is where all the brake fluid goes. So we are
14 inspecting this for mechanical integrity, leaks, cracks.
15 This is out of position, do any of these fittings leak, are
16 any of the brake lines compromised, is the connectors in
17 place, are the wires looking good.

18 Again, clean bill of health on all accounts. It is
19 also the same competent that does the EBD function. It is
20 all the same component.

21 Q Did you see anything, anything at all in your
22 inspection of this vehicle that would suggest to you that
23 there was something wrong with these brakes that would mean
24 that they weren't working right on the day of Mrs. Bookout's
25 crash?

1 A Nothing at all.

2 Q Is there anything that you have seen or encountered
3 in your work in this case so far that would indicate that if
4 when Mrs. Bookout came off the highway and got on this ramp
5 and had applied the brakes as she came along this ramp that
6 she couldn't have stopped safely down here at this stop
7 sign?

8 A There is nothing. Everything that I have seen
9 indicates that if you press the brakes on this car it is
10 going to stop, even if the throttle is intentionally held
11 open.

12 Q But that didn't happen in this instance, didn't stop?

13 A The car did not stop until it hit the ditch; that's
14 correct.

15 Q So given what you understand about the way that the
16 brakes work, what does that mean to you with respect to what
17 happened?

18 A Well, there are two things. The first thing is that
19 at a very high level of the reconstruction, Mrs. Bookout is
20 coming off the freeway at freeway speeds, 65 or 70 miles an
21 hour are the numbers people are using there. We don't have
22 any hard evidence, so we don't know for sure, but I think
23 that is a reasonable expectation coming off the freeway at
24 65 to 70.

25 We know by the time she goes off the road into the

1 ditch -- and if I can approach the model, maybe I can point
2 that out.

3 Q Sure. With the court's permission.

4 THE COURT: Yes.

5 THE WITNESS: So we know at this part of the
6 scenario, 66 to 70 miles per hour. We know down here where
7 the car goes off the road for the first time, whether you
8 listen to Mr. McCort or Mr. Stopschinski, they both have the
9 car leaving the road at about 30 miles per hour, somewhere
10 around there. So the car slowed from 65 or 70 to 30.

11 We also know that along that path what Mr.
12 Stopschinski's coast-down testing showed you, if you just
13 come off the freeway and just release both pedals and just
14 coast you're going much faster than 30 miles per hour down
15 here. So at some point there must have been some braking.
16 We can't say how much necessarily, but it was enough to get
17 the car from 70 miles an hour or so to 30 miles an hour or
18 so.

19 We have some evidence down here, which I'm sure we
20 will talk about in more detail later, there is no evidence
21 up here. But overall, there is some evidence this car did
22 slow down at least 40 miles an hour or so by the time it
23 left the roadway and it hit the ditch.

24 Q Good. You read my mind. The next thing on my mind
25 is the tire mark, these two tire marks that we see depicted

1 on the model. You have seen those there, haven't you?

2 A Yes, I have.

3 Q Okay. What have you done in this case to investigate
4 those marks, and what kind of thing can cause those marks?

5 A I've done a couple of things. The first I relied
6 upon my own experience and my own background as to how
7 vehicles leave marks in coming to my opinions. But I have
8 augmented that now with some specific vehicle testing
9 specific for this matter as a demonstrative to demonstrate
10 how marks can be made by a 2005 Camry.

11 I also applied my understanding of how the braking
12 brake system works as well as the ABS and the EBD, how those
13 systems work, and how those can influence an ability of a
14 tire to leave a mark or not.

15 Q Let's talk about that first. Let's talk about the
16 service brake, the foot brake, and the capacity of that
17 brake to leave a mark like this. Now, did you do some
18 testing to address that subject?

19 A I've done some to address exactly that subject. Yes.

20 Q In this case?

21 A In this case. Yes.

22 Q How did you do it?

23 A It was pretty simple and fair, actually. I used the
24 same vehicle Mr. Stopschinski used for his site drive
25 testing, that 2005 blue Camry, which was substantially

1 similar to the crash-involved vehicle. We call that the
2 exemplar. I used the same instrumentation package, or the
3 same data acquisitions, same sensors, same computers,
4 measured the exact same things that Mr. Stopschinski did in
5 his site drive. We just went to a big parking lot, when out
6 there and hit the brakes and videotaped it. And we recorded
7 the marks that we left. We didn't to anything special.

8 Q Is it that simple, you just drive along through a big
9 parking lot and put on the brake?

10 A It was way that simple. Yes.

11 Q Then get out and do, what, look for marks?

12 A Take some pictures and record it with a video. Yes.

13 Q Let's look at the picture. All right. Where are we
14 and what are we looking at?

15 A So this testing was performed in a very large parking
16 lot that we have closed access to in Houston, Texas. It is
17 a paved asphalt parking lot, it is relatively flat,
18 relatively level. There aren't any disturbances. It is
19 relatively well maintained. What you see down here in the
20 distance there is a camera there on a tripod that is going
21 to be videotaping the car which is going to be driving from
22 where we are away from us into the picture.

23 And if you zoom back out for a second, this area
24 here is where we're going to be applying the brakes and
25 bringing the car to a stop. Now, we didn't try to hit an

1 exact speed. We didn't try to hit an exact pedal force. We
2 wanted to show with about a 30-pound pedal force, and about
3 a 50-pound pedal force, these two ranges, from about 50
4 miles an hour, how marks could be left. This is what the
5 surface looked like, and we documented that prior to
6 actually doing the test.

7 Q All right. Then do you document it after the test?

8 A We do. We have a photograph for that.

9 Q Let's look at it.

10 A So this is just moments later. The driver went 50
11 miles per hour approximately and applied -- I forget, this
12 was the 30-pound or the 50-pound, but the results were
13 essentially the same. You can see that after the test we
14 now have these two tire marks, these two prominent tire
15 marks, coming from the two sides of the vehicle.

16 Q If we were watching a video here, would we see
17 anything more than just a vehicle driving down the road and
18 stopping?

19 A You would see the marks being left behind it as it
20 stopped. But it is just a car going along and stopping.

21 Q Would you think of those tire marks there as
22 prominent?

23 A Words like that are highly subjective. I know I
24 heard people talk about dark marks and prominent marks and
25 heavy marks and partially heavy marks. They are what they

1 are. They speak for themselves. But are they observable?
2 Yes. Are they on the pavement? Yes. Were they left
3 without skidding the tires? Yes. They were left by a car
4 with ABS. So is it a prominent mark? In my opinion I would
5 say yes, but somebody else might not have that same opinion,
6 but I think they are prominent.

7 Q Well, you mentioned that this vehicle had ABS brakes
8 on it. This a 2005 Camry that you used, right?

9 A It's an exemplar vehicle which is identical
10 mechanically to the crash-involved vehicle including the
11 same make and brand of tires on the vehicle.

12 Q All those brake system components that look at and
13 photographed a few minutes ago from Ms. Bookout's vehicle,
14 are they on this vehicle?

15 A The exact same ones. Yes.

16 Q Okay. Well, have you had a chance to take a look at
17 that 1994 SAE paper that came up early in this trial about
18 tire marks?

19 A I have.

20 Q There was a suggestion then that there was some
21 unfairness about comparing tire marks that were created back
22 in 1994 with a vehicle of that vintage with what we know
23 today about ABS marks. Is that a fair comparison? Is that
24 data that we have from 1994 still valid despite the onset of
25 EBD?

1 A Now, I've been working in this field since 1994. I
2 began with Kelsey-Hayes in January of 1995 doing ABS
3 testing. And those cars that I was developing at that point
4 in time left tire marks. Again, it is not new information;
5 that paper's information is relevant then as it is today. I
6 explained earlier the EBD function replaces that
7 proportioning valve thing. But from a vehicle perspective,
8 from a function, it does the same thing.

9 So whether your car has EBD or it has a prop valve
10 or it has ABS or it doesn't, none of those factor into
11 whether you leave a mark or not. All of those things can
12 leave a mark in some way, shape, or form. It depends on a
13 lot of variables. The point of this demonstration was to
14 show that with this type of vehicle with this type of brake
15 system with this type of tire at these kinds of speeds you
16 can leave a mark.

17 It is just meant to be demonstrative, but there is
18 no difference between 1994 and present as far as the
19 relevance of that analysis.

20 Q Do you get a different kind of mark if you stop a
21 vehicle by locking up the rear wheels by pulling the parking
22 brake?

23 A You definitely can leave a very different looking
24 kind of a mark if you only applied and locked the rear tires
25 with the parking brake.

1 Q Here we have straight line, more or less straight
2 marks. What kind of marks are you going to get by pulling
3 the parking brake?

4 A Well, as we discussed earlier, if you lock up that
5 rear parking brake, the vehicle has no lateral stability,
6 and it will spinout, and it will spinout pretty quickly. It
7 will spinout more quickly if you have any steering dialed in
8 or if there is a crown in the road or things like this. So
9 because of that, the vehicle is going to go off on some
10 other path. It will follow this spinning motion.

11 You don't get a straight tire mark if you have the
12 rear brake locked up. It is simply the laws of physics
13 dictate the vehicle will go off in a spinning motion and
14 will not follow, necessarily, that straight-ahead path that
15 you see here in this particular test.

16 Q So then you get a curved mark, don't you?

17 A Yes. You get a curved mark. Or in some cases, the
18 vehicle may spin but still follow more of a straight line,
19 in which case it is more of a curly Q kind of mark. So
20 based upon what the operator is doing, what the surface is,
21 what the steering is, the car may go over here or it may go
22 straight. But while it is going straight, it is spinning
23 around.

24 So if you trace the path the tire takes, the tire
25 is not going straight even if the car is. The tire is going

1 around the car in a curly Q kind of fashion and you get this
2 wavy kind of mark. So whether it is a wavy mark or a mark
3 off to the right depends on what you're doing, but you don't
4 get a straight mark in either case.

5 Q I think this is clear, but if you're comparing the
6 service brake, the foot brake and the parking brake, are
7 those two systems in a car completely independent and
8 separate of each other?

9 A The actuation component is; that is where the force
10 comes from to activate the brake. The service brake comes
11 from your foot pushing on the brake pedal. The parking
12 brake comes from your hand pulling up on the lever. The
13 service brake uses those hydraulics to activate. The
14 parking brake uses the cables.

15 Now, the brake assembly, the drum brake, is the
16 same. It is the same thing stopping the tires, but how it
17 stops the tires is different.

18 Q Did you do some parking brake tests?

19 A I did, in fact, do some parking brake test.

20 Q Tell us about those, would you, please.

21 A Certainly. What I did, with Mr. Stopschinski's
22 assistance, was in this same parking lot, in the same
23 general area, we laid out with cones the geometry of the
24 roadway at or around the intersection. We then drove into
25 that with the same exemplar vehicle with the same

1 instrumentation collecting the same data, the same pieces of
2 information. And what we did was as we entered the corner
3 where that green dot was, you recall that green dot, at the
4 green dot we applied the parking brake; that's where the
5 tire mark starts, that's where we pulled up on the parking
6 brake.

7 Q So to design these tests to understand how you want
8 to do them, do you have to first understand what happened
9 here on the ground, understand how the road looked and where
10 the car went?

11 A Absolutely. We had to rely on Mr. Stopschinski's
12 survey data, that total station the he talked about so we
13 could actually resurvey this parking lot and layout that
14 roadway geometry, that profile of curvature in this large
15 parking lot.

16 Q We will look at that course that you followed in just
17 a minute.

18 MR. JENNINGS: Can we take two minutes and have Mr.
19 walker show us the part of this that is the basis for
20 designing the course?

21 THE COURT: Yes.

22 Q (By Mr. Jennings) Step down, please, sir. Using
23 this, give us a preview of what we will see in a minute with
24 respect to the way that you ran the parking brake test,
25 okay?

1 A Sure. You heard a lot of discussions about speeds
2 and trajectories and steering and this sort of thing. I
3 want to take a lot of that off the table. I want to talk
4 about the physics of could that mark be left by the parking
5 brake. So the course that we laid out using orange traffic
6 control pylons or cones is essentially this part of the
7 maneuver, or this part of the scene.

8 What you will see is a line of cones delineating
9 the lane of travel here. This lane will go straight, and it
10 will have a lane that goes off to our right. You can see
11 here on the model, perhaps, where this mark starts is into
12 the turn. As Mr. Stopschinski told you, the car has to
13 first be steered to the right and then braked to start
14 leaving the mark at that location.

15 So come down the ramp relatively straight, and
16 begin turning and then apply the brake. So we put a spot
17 out there on the track that we said as soon as you get past
18 this turning point apply the brake; that is our green dot,
19 so to speak. So we looked at the vehicle movement in just
20 this region. We came into the course at a speed of about 45
21 miles an hour. We did that because the reconstructionist
22 had a range of 45 to 50, based upon either Mr. Stopschinski
23 or Mr. McCort.

24 So we came in at about 45 miles an hour, began to
25 steer consistent with this path. We didn't steer more than

1 we needed to. We didn't steer less, we steered to follow
2 where the cones went. So we didn't have some predetermined
3 angle. We said the cones are there, and we will steer to
4 there to go over there. Once we got into that turn, we then
5 applied the parking brake.

6 Q Okay. Let's put up test run number 7. Anything you
7 need to tell us, Mr. Walker, so we know what we're about to
8 see?

9 A If we pause this right here. So this particular run
10 I was doing the driving. I came into this course at about
11 45 miles an hour. You will see the speed there superimposed
12 inside the video like Mr. Stopschinski had. Once I got to
13 that point where I began my turning, I fully released the
14 gas pedal or the accelerator pedal, didn't touch the brake
15 pedal at all, and I pulled up on the parking brake.

16 And we had a little force meter on the parking
17 brake, or a transducer, that measured how hard we pulled up
18 on it. This happened to be about 27 pounds. It's a
19 moderate little pull. I'm not jamming up on it, just a
20 moderate little pull on the parking brake, but it was enough
21 to get the rear tires to lock up.

22 You will see me go into the course. I will begin
23 steering. As soon as I begin steering, that's when I apply
24 the brake; that's where the green dot is. The amount of
25 steering is only that required to follow the path, nothing

1 extra. We are not trying to cheat the test by steering even
2 more or driving the car to try to get the car to spinout
3 and. You will see the results of the test as when we run
4 the video.

5 Q Okay. Let's look.

6 A If we pause right here, it might be useful for me
7 with the laser pointer point out where the course is. It is
8 kind of hard to see from this high up.

9 Q Go ahead, if you would.

10 A So what you're looking at here, the inset view, this
11 is me driving the vehicle, here is the steering wheel. My
12 hand is down here about ready to pull up on the parking
13 brake. You can see at this point in time as I am
14 approaching the course I am going about 47 miles per hour.
15 Now, if you see there is a cone right here, and there is a
16 row of cones kind of hard to see. But this row right here,
17 or this line, would be the roadway that goes straight down
18 to the stop sign without turning.

19 You can see there is a row of cones here and a row
20 of cones here. This is the turn off to the right. So the
21 car is coming in the course through this gate right here and
22 making this right-hand turn. You can see some tire marks
23 from some previous tests that were run. This was test 7 in
24 a sequence. So you can see as soon as the turn began, that
25 is the green dot spot, we were applying the brake at about

1 the green dot spot, as soon as you begin turning, apply the
2 parking brake.

3 So I'm steering to drive the car along this path
4 here. This path is one, two, three cones, one, two, three
5 cones; that is the ramp to the right. Had we just gone
6 straight, that is where this stop sign would have been.
7 That's not where the crashed car went. I am driving in here
8 at 45 miles and hour, I will begin steering as soon as I
9 begin doing that, pull up on the parking brake.

10 Q Did you take some care in actually laying out this
11 course?

12 A It was using exactly the survey data. So it is as
13 accurate as it can be a representation without the grade.
14 we couldn't submit the downhill grade in this portion, but
15 you can see from the model the gray flatten out towards the
16 end substantially. It is not as significant as it is up
17 farther on the ramp. So we couldn't do the grade, but the
18 geometry of the roadway is all identical.

19 Q Let's see what happened.

20 A Okay.

21 Q Is that what you call a bootlegger turn?

22 A That's what it can be called. Sure.

23 Q Okay. Is that what happened to Mrs. Bookout's
24 vehicle in this crash?

25 A The evidence is that that is not what happened in

1 this crash. The physical evidence that we have is a single
2 straight tire mark on the right and a shorter straight tire
3 mark on the left. We don't have those arched marks. If you
4 go back a little bit and we just pause at the end of that
5 video, pause right there, you can see these are curved
6 marks. You see how they cross over as each other. As the
7 car is spinning around, the rear tires become the front
8 tires, so the marks actually cross over. It is a unique
9 kind of a thing to a car that is spinning out. We have none
10 of that in the physical evidence left at the Bookout scene,
11 we just have these two marks that are parallel and straight
12 going off the road.

13 Q Did you do another test?

14 A We did. The other one that we have here is just the
15 same view of the same test if you want to run the video.

16 Q Let's do that.

17 A So this next view here is going to be the exact same
18 test. We will just view it from the ground view now with
19 the car coming at us. So we're now standing at the end of
20 the ramp with the car coming toward us. Again, about 45
21 miles an hour, steer, apply brake, and you see the affect is
22 that the car spins out. Again, 45 miles an hour, 27 pounds
23 of pulling up on the hand brake. You get that nice set of
24 curved marks all the way off the roadway.

25 Q Okay.

1 A We obviously couldn't do this at the crash scene
2 because it would have been a safety issue to do it out
3 there; that's why we did this out in the parking lot in
4 Houston, not actually at the scene of the crash.

5 Q Well, if you weren't doing that in big wide space but
6 you were doing it on a narrow track like this, do you run
7 risk of running into things and tripping the vehicle, maybe
8 turning it over?

9 A It could be a very bad thing. Yes. That's why we do
10 this sort of testing in the large parking lot.

11 Q Test 9. Let's look at that.

12 A So press pause here. The only think that was
13 significantly different between run 7 and run 9 is there
14 were some comments made early on, I believe by Mr. McCort
15 that if you had a stuck throttle condition and if there was
16 power going to the front tires, that that would somehow pull
17 the vehicle straight again.

18 So even if you pulled up the parking brake, you
19 wouldn't get a curved mark because he theorized that the
20 engine power would pull the car straight ahead. So I went
21 and reran that exact same test. Here it is 32 pounds of the
22 parking brake, but again just enough to lock the rear
23 brakes; again, 45 miles an hour. And as soon as the vehicle
24 begins to go into its locked rear wheel, I went to 75
25 percent throttle.

1 I just put the pedal down toward the floor. Didn't
2 quite floor it, but I give it about 75 percent. It is
3 enough to get the tires spinning and there is smoke coming
4 up under the car. But at the end of it you will see the car
5 still spins out because the back tires can't support lateral
6 force no matter what the front tires are doing. It doesn't
7 somehow pull the car straight again.

8 Q Let's be clear about why you did it this way with the
9 open throttle. Had the open throttle, the continuing
10 acceleration and positive torque at the front wheels we have
11 a front-wheel drive vehicle that have been offered by Mr.
12 McCort as an explanation for why the vehicle didn't spinout?

13 A It is my understanding that was his explanation to
14 say why the tire marks were straight having been left by, in
15 his opinion, the parking brake.

16 Q Well, just from the standpoint of physics and
17 Newton's Laws of Motion, and understanding those, does that
18 make sense?

19 A Not at all. It is inconsistent with the physics of
20 turning. I teach my SAE class about this. I have a whole
21 module about this. If the rear tires don't have lateral
22 force, they don't have lateral force, no matter what the
23 front end is doing. The front end can't suddenly make it
24 all better. It can't delay the inevitable, the way I think
25 he phrased it. The car spins out all the same.

1 Q well, do locked-up rear tires, the kind you get when
2 you pull the parking brake have lateral force? Do they
3 provide stability, or do they take away stability?

4 A They take away the vehicle stability. You can't
5 sustain any kind of cornering force, side force, turning
6 force, yaw force, ruts in the road, side winds. All of
7 those types of things, just minute little changes in the
8 environment can get a car to spinout if those rear tires
9 lock up. It doesn't take a big thing. It takes just a
10 small thing to get the car to spinout.

11 Q First, let's look at run number 9, throttle open,
12 positive torque at the front wheel.

13 A Sure. So the course is exactly the same, we are
14 steering off to the right. But now as soon as I pull the
15 parking brake up, I will put the pedal down to about 75
16 percent gas. You can see the front tire is actually smoking
17 it is spinning so much, but the vehicle ends up in dang near
18 the exact same place. It just doesn't make a difference.

19 The positive drive torque doesn't influence the
20 vehicle motion. It is the physics of turning no the physics
21 of going.

22 Q Okay.

23 A This is the exact same run now just the ground plain
24 view. You can see my foot on the gas pedal. I push the gas
25 pedal down, see my foot there move my pedal down. And I

1 hold it there until the end where I hit the brake just to
2 get the car to stop.

3 Q Okay. Anything else on those tests?

4 A I think that covers it.

5 Q Let me ask this: When Mr. McCort came to his
6 deposition, he had excerpts from this book, *Brake and Design*
7 *Safety* by Rudolf Limpert. You have seen that excerpt from
8 his file, haven't you?

9 A I have.

10 Q And he highlighting on this section called vehicle
11 stability analysis, and it was offered as an explanation for
12 why this vehicle didn't spin out. Have you read this part
13 of this book on this subject?

14 A I have.

15 Q And are the physics recited and described in this
16 book with respect to vehicle stability correct?

17 A I've studied that one particular section in detail.
18 I can't speak for the entire book, but certainly in that
19 book there is what is called a free-body diagram. It is an
20 engineer's way of drawing the car and drawing the forces
21 acting on the car and figuring out what the car is going to
22 do. In that regard, the drawing is accurate. But there is
23 no mention at all in the book about if there is a drive
24 force on the front axle and somehow it makes it all good
25 again. There is no reference to that because it simply

1 isn't germane to the analysis.

2 Q Well, when you are driving a car like Ms. Bookout's
3 down this ramp, can you just kind of point it down and just
4 take your hands off the steering wheel and let it go, expect
5 to get there?

6 A I think we all know just from daily driving that
7 there is really never an appropriate time to take your hands
8 off the wheel. The car is operating in the real world. The
9 real world isn't perfectly smooth and flat. You're always
10 making small adjustments to your steering. Just going down
11 the freeway in a straight line, take your hands off the
12 wheel, end up in the ditch pretty shortly.

13 You always have to make adjustments. Driving is an
14 active participation event. You have to steer your vehicle
15 continuously. This off-ramp would be no different. There
16 must have been steering along that ramp. For Ms. Bookout's
17 vehicle to get to the location where the tire mark begins,
18 to get to the green dot, there must have been steering to
19 the right to get there. And there must have been steering
20 that occurred before the brake was applied at the green dot.

21 Q You mentioned that as the vehicle goes down the ramp
22 there are various things that are being encountered. You
23 said that there is a crown in the road. Kind of peaks so
24 water will drain off, right?

25 A Correct. Drainage.

1 Q All right. And you've got an irregular surface
2 because this is before the resurfacing was done; is that
3 right?

4 A It certainly would be an older surface than the
5 surface that was laid over the top of it. But over time,
6 surfaces do get worn. Sure.

7 Q You have a downhill run here, right?

8 A There is a downslope all the way. Yes.

9 Q So there are variations in the road, variations in
10 the vehicle that enter into the dynamics that we're
11 evaluating here, right?

12 A Certainly. The loading of the vehicle, where the
13 occupants are, how much they weigh, things of this nature.

14 Q What are all of those things causing? What are they
15 making this car want to do as it goes down the ramp?

16 A At all times, the car is being exposed to forces that
17 want it to spinout. That's why when you pull the hand brake
18 up it always does spinout, because there are these forces in
19 nature that are always conspiring to spin a car out.

20 Now, back end normally isn't locked up, so it
21 doesn't spinout. The car generally tracks where you point
22 it with the steering wheel. But if the tires can't sustain
23 that side force in the back, then under those circumstances
24 those forces will overwhelm the car's stability and cause
25 the car to spin around.

1 Q According to this book and the laws of physics as you
2 know it, does it take much of a disturbance of the vehicle
3 to make it actually spinout if you lockup the rear wheels?

4 A No. It is a minute thing.

5 Q There was a suggestion by Mr. McCort that, well, in
6 time the vehicle would spinout. But in the short run, while
7 the -- while we're going down the ramp, the positive torque
8 or open throttle at the front wheels will keep the vehicle
9 going. Does that make sense?

10 A It does not. And I should qualify that. In the
11 speed ranges that we're discussing in this crash, certainly
12 if you lockup the parking brake at five miles an hour, or
13 maybe ten miles an hour, maybe it might slide straight for a
14 little bit, because you only stop in about 20 or 30 feet,
15 there isn't enough time. But at these 45 and 50 mile per
16 hour speeds we're talking about here, you pull up on the
17 hand brake, the car is going to go around backwards.

18 Q One final footnote on this brake throttle override
19 that you mentioned early on. Is the presence of brake
20 throttle override going to go anything to prevent this
21 accident?

22 A There is nothing about the timing and circumstances
23 and causes and conditions in this crash that would in any
24 way, shape or form allow brake override to have any affect
25 on the vehicle motion. It is not designed for the types of

1 scenarios that have even been hypothesized. I'm not saying
2 that there was a UA event. But even if there was that type
3 of a UA event, given the characteristics of braking and the
4 distances and the speeds involved, this isn't the kind of an
5 event where brake override does anything.

6 Q You started out, we started out about an hour and 15
7 minutes ago with a discussion of what your opinions were.
8 Do you remember your first opinion?

9 A I do.

10 Q What was it?

11 A That the design of the 2005 Camry brake system is not
12 defective. It is a good brake system. It has great
13 stopping capacity, margin of safety in its performance, and
14 it can overcome even open throttle conditions with adequate
15 braking.

16 Q Is that still your opinion?

17 A Absolutely.

18 MR. JENNINGS: Thank you. No more questions.

19 THE COURT: Who is going to cross-exam?

20 MR. BAKER: I am.

21 THE COURT: You may proceed.

22 CROSS-EXAMINATION

23 BY MR. BAKER:

24 Q Mr. Walker, how are you?

25 A I'm just fine. Thank you very much.

1 Q I'm Ben Baker. We never met before, correct?

2 A I can't recall having met you.

3 Q I don't believe we have met, so I wanted to introduce
4 myself. I have just a few questions for you. In the videos
5 we just saw of your what I call the bootlegger tests, I
6 notice at least in the first one that you took your foot off
7 the throttle; is that right?

8 A There was no application of throttle or brake in test
9 7 that we showed.

10 Q Okay. And you also mentioned a couple of the tests
11 that you did where you did just skid tests just to show skid
12 marks. Do you remember those?

13 A I wouldn't call them skid tests, but we did
14 straight-line braking evaluations, the first still images
15 that we showed.

16 Q And you did three of those tests, right?

17 A Yes. There were a total of three that were run for
18 the demonstrative purpose.

19 Q And I think all three were run at approximately 50
20 miles an hour?

21 A About 50 miles an hour. Sure.

22 Q And I think one of them, actually, when you started
23 applying the brake you may have been 51 miles an hour, just
24 over?

25 A It may have been. We weren't trying to be specific.

1 we were simply trying to see if we left marks at about that
2 speed range.

3 Q And in each of those tests you took your foot off the
4 throttle and applied the brake?

5 A That's correct. To be very specific, I wasn't
6 actually driving, but the driver of the vehicle did that at
7 my direction.

8 Q And do you understand that in this case it's Toyota's
9 position that once the skid mark began to be made Ms.
10 Bookout had her foot on the brake, the service brake?

11 A I wouldn't call it a skid mark; that has a specific
12 connotation to it. A skid mark means a locked tire which is
13 being dragged. I will call it a tire mark. There is some
14 rubber left on the road. And it is my understanding that
15 that is left by application of the service brakes.

16 Q Sorry. I called it a skid mark. Trooper Duerson
17 called it a skid mark, so that's why I called it a skid
18 mark, but I will use your term tire mark.

19 A That's fine. Sure.

20 Q So I put this driving up. This is Mr. McCort's same
21 diagram and I just want to use it to write some notes on it.
22 So as you understand it, again, I just asked you this
23 question, it is Toyota's position that at the beginning of
24 this tire mark Ms. Bookout has her foot on the brake, the
25 service brake?

1 A It would be consistent with her applying the brake at
2 that location. Yes.

3 Q And that's Toyota's position in this case?

4 A That is Mr. Stopschinski's reconstruction. I believe
5 it is Toyota's position. Sure.

6 Q And he is testifying for Toyota?

7 A He is.

8 Q I will write foot on brake, service brake. I will
9 write on top on that Toyota. We know that it is Toyota's
10 position at this mark where the tire mark starts?

11 A I guess one thing we have to be clear about is this
12 is Mr. McCort's reconstruction. He has the dot in a
13 different place than Mr. Stopschinski did.

14 Q I'm just talking about the tire mark, okay?

15 A Okay.

16 Q The trooper testified here, and he said it was 150
17 feet. Are you aware of that?

18 A I'm aware that is not the distance of the mark. That
19 is from the point of rest of the tire to where the mark
20 began.

21 Q You understand that Trooper Duerson came here to this
22 courtroom and he took his roller out, and he said he stood
23 next to the rear tire, took his roller and rolled all the
24 way up the road, all the way to the end of that mark, and
25 said it was 150 feet from the back of the car. Did you know

1 that's what he said?

2 A I didn't read his testimony. I haven't seen that,
3 but I will represent you're taking that as being true. So,
4 okay, I can accept representation of that.

5 Q Step down here for us, please. Let me ask you a
6 question.

7 A Sure.

8 Q Now, you understand from the reconstruction of Mr.
9 Stopschinski that he has got the vehicle at final rest
10 stopping at this point, correct?

11 A Where these vehicles are placed right now, I'm not
12 sure if they have been moved. But generally speaking, the
13 point of rest is up and to the right of where the gouge is.
14 I'm not sure if that is placed to scale but in that general
15 area right there, but that general area.

16 Q All right. Assume for me -- well, you were here.
17 You saw him place the car right here, didn't you?

18 A I'm not sure if it was moved since.

19 Q Well, you understand that his ending spot for the car
20 is off to the right of where it initially impacted the bank
21 according to Mr. Stopschinski.

22 A Correct.

23 Q And you agree with me that there is no way for the
24 trooper to step behind the car at the right rear and start
25 walking up the skid mark or tire mark from that resting

1 spot, correct?

2 A I'm not sure if there would or would not. I haven't
3 thought about that.

4 Q Well, the trooper told us here that he started the
5 rear tire and immediately walked all the way up to the end
6 of the mark to come up with 150 feet. Did you know he said
7 that?

8 A Again, I haven't read his testimony. If you're
9 inferring there is mark that goes down to the ditch
10 continuously, I believe the car was airborne for a part of
11 that. I'm not sure there is a continuous mark, but that he
12 marked off where ever the vehicle was to the starting mark
13 with his roller.

14 Q The point is simply this: If the vehicle has moved
15 over here, as Mr. Stopschinski said, the trooper can't start
16 at the rear tire and walk straight back to the skid mark,
17 can he, because the vehicle has moved away from the skid
18 mark, correct?

19 A Again, without knowing what the officer did or how he
20 did it, I would have to understand that in more detail.

21 Q Thank you. In fact, you've had two depositions in
22 this case, haven't you?

23 A I have.

24 Q And you understand that before your deposition is
25 taken, the lawyers actually provide a document that has a

1 summary of your opinions and give it to us?

2 A That is my understanding. Sure.

3 Q And you saw that true document, didn't you?

4 A I've seen both of them. Yes.

5 Q In each one, it lists each of the experts that Toyota
6 plan to call at trial and lists their opinions, correct?

7 A I'm not sure if it's who they plan to put up at
8 trial, but they certainly list some experts and list some
9 summary opinions of those experts; that is my general
10 understanding of that document.

11 Q After that, after they give us a summary of opinions,
12 we then took your deposition. In fact, Mr. Esdale took your
13 deposition, correct?

14 A Again, there were two depositions. I was one of the
15 first ones to go, and then a second one was later in the
16 process.

17 Q Mr. Esdale took them both, didn't he?

18 A He did. Yes.

19 Q In the first deposition, it was your belief that this
20 tire mark was actually to an unrelated accident, wasn't it?

21 A No. That is not accurate actually.

22 Q All right. Let's take a look at his deposition,
23 please. Have you got it?

24 A I do actually.

25 Q Okay. Great. Let's look at page 89, please, at line

1 20. I will start reading the question:

2 "And how do you account for the 150 foot of skid marks?

3 "Your answer: I have read that. I understand the
4 officer doing the investigation noted that. I haven't
5 seen photographs of this. I don't know what the
6 reconstructionists make of that mark."

7 This is on page 90.

8 "I'm not necessarily sure that mark is related to the
9 crash at this point."

10 Is that your testimony back at your first
11 deposition in August?

12 A Which is different than what you suggested it was a
13 moment ago. You read it accurately to be sure. Yes. I
14 didn't know at that point in time whether it was or was not,
15 because neither reconstructionist had weighed in on whether
16 that mark was related or not. I simply didn't know.

17 Q That's what I asked you, sir. At the time of your
18 deposition, you didn't even know if that mark related to
19 this wreck, did you?

20 A Again, if you read my deposition at that point in
21 time, neither reconstructionist had put their materials out.
22 I was deposed out of sequence. I went after the -- or
23 before the reconstructionists. So because I didn't know
24 what their opinions were, I had no way to know if it was
25 related to the crash or not.

1 Q You're in the same office with Mr. Stopschinski,
2 aren't you?

3 A We work for the same company. Yes.

4 Q He had given his summary of his opinions in the same
5 letter where your summary was given, didn't he?

6 A He gave opinions that the lawyers put into a
7 declaration or a declaration document, I believe.

8 Q Right. And so at that time you had already formed
9 your opinions, given then to the lawyers so they can be
10 given to us and you didn't even know if this skid mark
11 marked related to this accident?

12 A That is not true at all. What I stated in my
13 deposition was that I reserved the right to augment, modify
14 or amend opinions based upon what all the other experts had
15 to offer. It is very uncommon for me, as a defense expert,
16 to be the first person to go.

17 I had nothing to rely upon. I didn't have the
18 reconstructions from either the plaintiffs or the defense.
19 I didn't have the plaintiffs' defect theories at that point
20 in time, so I really didn't know what I had to analyze
21 because those simply hadn't happened yet. So I went and
22 said very clearly that I'm still understanding this, I'm
23 still learning this, which is why we had a second
24 deposition.

25 Q You didn't walk down the hall and ask Mr.

1 Stopschinski, what do you make of this mark? You didn't go
2 ask him before you gave your opinions to the lawyers to give
3 to us?

4 A If you read my deposition, my comment was that I
5 talked to Mr. Stopschinski, and he stated it was an ongoing
6 work. He hadn't yet formulated that opinion in finality.
7 So because he hadn't come to a conclusion yet, I couldn't
8 come to a conclusion either. I had to wait until he was
9 deposed, until he had a final opinion on that subject. It
10 would be improper for me to come to an opinion about that
11 without first knowing what the reconstructionists, who go
12 through this fine level of detail, understood it to be.

13 Q Isn't it true in the summary of his opinions Mr.
14 Stopschinski in his disclosure actually said the mark was
15 related to this accident, didn't he?

16 A I think the language used most likely or something
17 along those lines.

18 Q In fact, later in your deposition it was shown to
19 you, and you actually realized that he did contribute this
20 mark to this accident. That's when you first learned about
21 it, wasn't it?

22 A I wouldn't say that is when I first learned about it,
23 he was still trying to understand that.

24 Q Either you knew before your deposition or you didn't
25 know that this mark related to this accident. Which is it?

1 A Well, I think I said three times now that prior to my
2 deposition I didn't have the final conclusions or final
3 opinions from either reconstructionist. I had to understand
4 what they had to offer before I could come to a final
5 conclusion, which is why I was deposed the second time.

6 Q Actually, you were deposed the second time so you
7 could talk about the testing that you just did; isn't that
8 true?

9 A That is certainly one of the things that we had
10 discussed. But the second deposition occurred because at my
11 first deposition I said I may have new opinions once I
12 receive all the other materials from all the other experts
13 because, again, I was deposed out of sequence.

14 Q But at your deposition you read Mr. Stop's summary.
15 And in that summary, he said that the mark was related
16 because he attributed it to the service brakes?

17 A Oh, he certainly had that in his declaration. That
18 was in this material, but his analysis was still ongoing.

19 Q Now, let me talk a little bit -- you ran three, what
20 did you call them, braking tests?

21 A Are you referring to the testing to evaluate the tire
22 marks.

23 Q Yes.

24 A Yes, there were three stopping tests.

25 Q You had test number 1, test number 2, and test number

1 3. And each were run at approximately 50 miles an hour?

2 A Approximately.

3 Q And was it Mr. Stop that picked this speed?

4 A We discussed it together. And because the
5 reconstructionist had that speed at the beginning of the
6 mark between about 45 and 50, we just chose 50.

7 Q All right. When you say that, we're back here to
8 where the tire mark began. And here I will say Toyota, he
9 has it about 50 miles an hour?

10 A I think approximately 50 was the number he shared
11 earlier today.

12 Q And then Mr. McCort, I believe he said 40 to 45 miles
13 an hour.

14 A The number that I recall is 45, but he may have given
15 a range there.

16 Q All right. So there was also a question about
17 whether Mr. McCort ran any specific test. Do you remember
18 being asked that?

19 A Yes.

20 Q Even though he didn't run any specific test, he is
21 pretty darn close to Mr. Stop's number, right?

22 A Well, really close is a relative kind of thing. Ten
23 miles an hour out of 50 is a big difference in energy. So
24 if you go 40 to 50, that could be significant in some
25 analysis. So I'm not going to say it is significant or not.

1 I will say there is a five to ten mile an hour difference
2 between the two.

3 Q All right. Very good. Now, let's go back to your
4 three tests. First one, as I understand, it didn't record
5 the data for that test?

6 A Yes. There was a false trigger on the data
7 acquisition.

8 Q On the other two tests you showed two skid marks that
9 we saw?

10 A Tire marks.

11 Q Tire marks. Two of them?

12 A Yes. Correct.

13 Q Which one of the tests, one, two or three showed one
14 tire mark that was there approximately a 100 feet long?

15 A We didn't do any test where we generated a single
16 tire mark.

17 Q And there was a single tire mark in this case?

18 A Well, there is two tire marks. One is significantly
19 longer than the other, but we have two marks in this case.

20 Q According to the trooper's measurements we have 101,
21 almost 125 of a single skid mark. Did any of your tests
22 have 125 of a single tire mark?

23 A We didn't measure the actual distance during our
24 evaluations. And of the tests that we ran, because we were
25 doing near-limit braking, we left two marks with both tires.

1 The intent was to do that 30 and 50 pounds of brake force.
2 So the intent was to bring all the tires to at or near their
3 maximum braking.

4 Q So it is 30 or 50 pounds of brake pressure?

5 A Those are approximate ranges. Yes.

6 Q Sure. That's brake pedal pressure, right?

7 A Yes. We saw earlier Mr. Stopschinski's black line.
8 without a robot in the car, you can't hold exactly one pedal
9 force for the whole stop. So the driver was told use just
10 enough effort to get it just barely into ABS; that is about
11 30. And the 50 was hit the pedal harder than that in order
12 to get full into ABS; so those were the approximate ranges.
13 It is brake pedal force, not actually brake pedal pressure.

14 Q Did you pull your tape out of the trunk and measure
15 the stopping distance in each of these tests?

16 A We weren't looking at stopping distance for this
17 particular evaluation.

18 Q Well, you're in luck, because Mr. Hannemann did it
19 for you. And we showed it to the jury during his testimony
20 And one was approximately 133 feet and one was approximately
21 110 feet. Do you recall? Were you there the day these test
22 were done?

23 A I was actually not in Houston on the day those tests
24 were run.

25 Q Well, that's what Mr. Hannemann showed the jury.

1 Now, if we go back here, and if the trooper's measurements
2 are correct, and we've got 101 plus 24, which would be 125,
3 to the fog line, and then he said there were six more feet
4 here of paved improvement on the other side of the fog line;
5 that would be about 131 feet, correct?

6 A If you're simply summing those numbers together,
7 that's what you get. Sure.

8 Q You're the engineer. I want to make sure I got my
9 math right. So we have got approximately 136 feet of -- 131
10 of paved surface according to the troopers. All right. So
11 if we take your tire mark tests at 50 miles an hour with 30
12 to 50 pounds of pressure with no throttle, it should have
13 stopped in one test before you got off the pavement,
14 correct?

15 A Well, the testing was not performed at this facility.
16 And the testing that we did was full braking. So certainly
17 the numbers which probably came from the data files we
18 provided Mr. Hannemann, if those are accurate numbers, and
19 they look reasonable for that kind of a test, then for full
20 braking, that is about the braking capacity of a Camry if
21 you simply hit the pedal and hold the pedal hard. That is
22 about the kind of deceleration you would get from a Camry.

23 Q Well, you agree that Ms. Bookout, under Toyota's
24 scenario, hit the brake and hit it hard because she left 150
25 foot of skid marks?

1 A I don't think anyone from Toyota has stated that she
2 gave it full braking; that was Mr. Stopschinski's low drag
3 factor analysis. That is the number he used. So she hit
4 the brakes to be sure, and she hit it hard enough to leave a
5 mark but not hard enough to leave two marks. As you saw
6 from the testing that I did, when we hit the brakes and got
7 into ABS or near ABS in the .8 to .85 Gs of deceleration, it
8 leaves two marks. Certainly at reduced brake effort it is
9 likely you will leave just one mark or lighter marks or some
10 combination thereof.

11 So clearly the braking at the crash scene, which
12 was most likely caused by the service brake, was caused by
13 application of the service brake that was not 30 to 50
14 pounds. It was too little to leave that kind of a mark
15 which explains why the car didn't stop in time.

16 Q Do you know who Dr. Young is?

17 A Doctor --

18 Q Have you read the human factors expert?

19 A Sure. I know Dr. Young. Yes.

20 Q Did you read his deposition in this case?

21 A I don't recall specifically if I have or not. I may
22 have.

23 Q Did you know that he told me in a situation like this
24 women like Ms. Bookout on average apply 100 pounds of pedal
25 force? Did you know that was his opinion in this case?

1 A So I'm familiar with Dr. Young's work in general, and
2 that comment in general. Certainly looking at statistically
3 what people are capable of generating and what different
4 scenarios might generate certain reactions from people, a
5 hundred pounds of brake force may sound like a lot to a
6 layperson. It is really not that much at all. So applying
7 100 pounds is not a difficult thing to do.

8 In that context, I would agree with him that a
9 hundred pounds of application isn't something that is
10 unreasonable. Now, the evidence here shows that didn't
11 happen. It was insufficient braking to get to the point
12 that the car stopped before the end of the roadway. But I'm
13 familiar with his opinion.

14 Q So if he offered in this case that more likely than
15 not Ms. Bookout applied 100 pounds of pressure, are you
16 disagreeing with him?

17 A Well, again, you said 100 pounds of pressure.
18 Pounds. It is force, it is not pressure, to be an engineer
19 about the thing. But if he offered the opinion that she
20 applied a hundred pounds of force at that distance, then the
21 testing shows the car would have stopped. So that would be
22 inconsistent, then the physical evidence would be
23 inconsistent with Ms. Bookout applying 100 pounds of brake
24 pedal force when she is 150 feet from the point of rest.

25 Q But you will agree she applied enough pressure on the

1 brake to cause there to be a tire mark left for at least 125
2 feet on a paved surface?

3 A That's what the testimony of the trooper indicates is
4 there was just enough braking to leave that one mark. And
5 to be fair, there is a mark on the other side of a shorter
6 distance.

7 Q Right. And I will be fair. And it is shown right
8 here on the drawing right here, starts about the fog line;
9 do you see that?

10 A Sure. Yeah.

11 Q Are you familiar with the testing that is done by Mr.
12 Arora in this case?

13 A I think it is Dr. Arora, but not intimately. No.

14 Q All right. I want you to assume for me that he's
15 done some testing in this case as well, and that in his
16 testing he did tests at 45 miles an hour. And he did like
17 you did, he went through his test pattern, he got to a
18 point, he took his foot off the throttle, and he applied the
19 brakes. And when he did at 45 miles an hour, the vehicle at
20 60 pounds of force always stopped at 100 feet or less.
21 would that surprise you?

22 A So I haven't seen this testing, but if the question
23 is 45 to zero would a 100-foot stopping distance be
24 reasonable, that is probably typical. I haven't done the
25 math on it, but 2005 Camry can probably stop in about 100

1 feet from 45 miles an hour. Sure.

2 Q In your tire mark testing, you didn't have the vacuum
3 deleted, did you?

4 A No. Not for that testing. We did not.

5 Q Did you do any testing in this case where you deleted
6 the brakes?

7 A None of the testing that I've done for this case was
8 intentionally deleting vacuum by any mechanism.

9 Q So if Mr. Arora's tests show that 45 miles an hour,
10 he can stop this vehicle in 100 feet or less with no
11 throttle, just using our measurements, the vehicle,
12 according to his test, would stop before it leaves the
13 pavement?

14 A Well, certainly. If, again, not having seen his
15 test, I'm assuming that he is running a test at full
16 braking, similar to my 30 to 50 pounds of brake pedal force
17 which again indicates to us that given the length of the
18 mark and speed at which the vehicle left the roadway, that
19 didn't happen in the crash. But if his testing shows that
20 vehicle stops in 100 feet from the brake pedal effort, I
21 think that's probably about the limit of that vehicle.

22 Q So with the testing that we have, and asking you to
23 assume some facts about Dr. Arora's testing, if we have this
24 vehicle traveling at 45 to 50 miles an hour with no
25 throttle, you would say it is reasonable for that vehicle to

1 be able to stop in 131 feet or less?

2 A If somebody applied that 30 to 50 pounds of brake
3 pedal force and held and maintained that, again, the vehicle
4 has deceleration capacity three to four times higher than
5 typical driving; that is that .85G or so. Sure, it is
6 withing the capacity of the vehicle. The vehicle had the
7 capacity to stop in that distance if that's where the brakes
8 were applied. The fact that it didn't stop in that distance
9 indicates the brakes were applied insufficiently at that
10 point in time.

11 Q Mr. Stop did some tests, and he showed them for us
12 running through the scene and applying some brake force.
13 And you were sitting here watching those tests?

14 A I did watch those tests. Yes.

15 Q And in none of those tests did he leave any tire
16 marks, did he?

17 A I believe the testing he was doing was not limit
18 braking. He was doing more combinations to look at various
19 scenarios not trying to leave tire marks. I don't believe
20 he did any stops that were up in the .8G range or even .5G
21 range. To that end, I don't think that was part of his
22 curriculum or was a part of the protocol to see if he would
23 do that or not at those lower deceleration levels.

24 Q The point of asking that question is the amount of
25 brake pedal force he was applying would be significantly

1 less than what Ms. Bookout would have applied in order to
2 leave the tire mark that she left, correct?

3 A I would have to go through Mr. Stopschinski's entire
4 test protocol to look line by line because several are done
5 with engine power, several without. I would have to go
6 through and do a more detailed study of that.

7 Q Well, we know from looking at the test he didn't
8 leave any skid mark or tire marks. So if he didn't leave
9 any, he certainly wasn't applying the brake as hard as Ms.
10 Bookout was applying it if she was applying the service
11 brake?

12 A Given what we know about this crash scenario and
13 speeds involved and things of that nature, I don't know for
14 sure if he left tire marks or not. I don't recall from
15 watching the video if the chase vehicle would have caught
16 that or not. So I can't say definitively that there weren't
17 any. I didn't see any, but I wasn't looking for them in the
18 videos.

19 Q Would you expect to have any at the two to five
20 pounds of brake pedal force he described in certain tests?

21 A Probably not at two to five pounds. Two to five
22 pounds is pretty low. I think those tests were the ones
23 where the car didn't get above about ten miles an hour. At
24 that level of pedal force, it is probably not going to leave
25 tire marks.

1 Q Let's talk about your bootlegger test.

2 THE COURT: Are you going to be a bit longer?

3 MR. BAKER: Yes.

4 THE COURT: Why don't we break for the day.

5 MR. BAKER: Okay.

6 THE COURT: Ladies and gentlemen, it is three
7 minutes to five. We're in recess for the night. Have a
8 good evening. Again: Do not discuss the case, do not form
9 any opinions about the case.

10 All rise while the jury exits.

11 (Whereupon, trial proceedings were continued to October
12 22, 2013.)

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1 STATE OF OKLAHOMA)
2 COUNTY OF OKLAHOMA)

3
4 C-E-R-T-I-F-I-C-A-T-E
5

6 I, Karen Twyford, Certified Shorthand Reporter, in
7 and for the County of Oklahoma, State of Oklahoma, do hereby
8 certify that the foregoing transcript is a true, correct,
9 and complete transcript of my stenographic notes.

10 I further certify that I am not related to any of
11 the parties herein, nor am I interested in any way in the
12 outcome of these proceedings.

13 WITNESS my Hand this _____ day of _____,
14 2013.

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